ZHERDEKIN, G.P.; GORELIK, L.E., otvetstvennyy redaktor; GOMEL'SKAYA, I.G., redaktor; RAKHLINA, N.P., tekhnicheskiy redaktor.

[High-speed methods of working metal and their utility] Skorostnye metody obrabotki metalla i ikh effektivnost'. Kiev, Izd-vo Akademii nauk Ukrainskoi SSR, 1953. 44 p. (MLRA 8:2)
(Metal cutting)

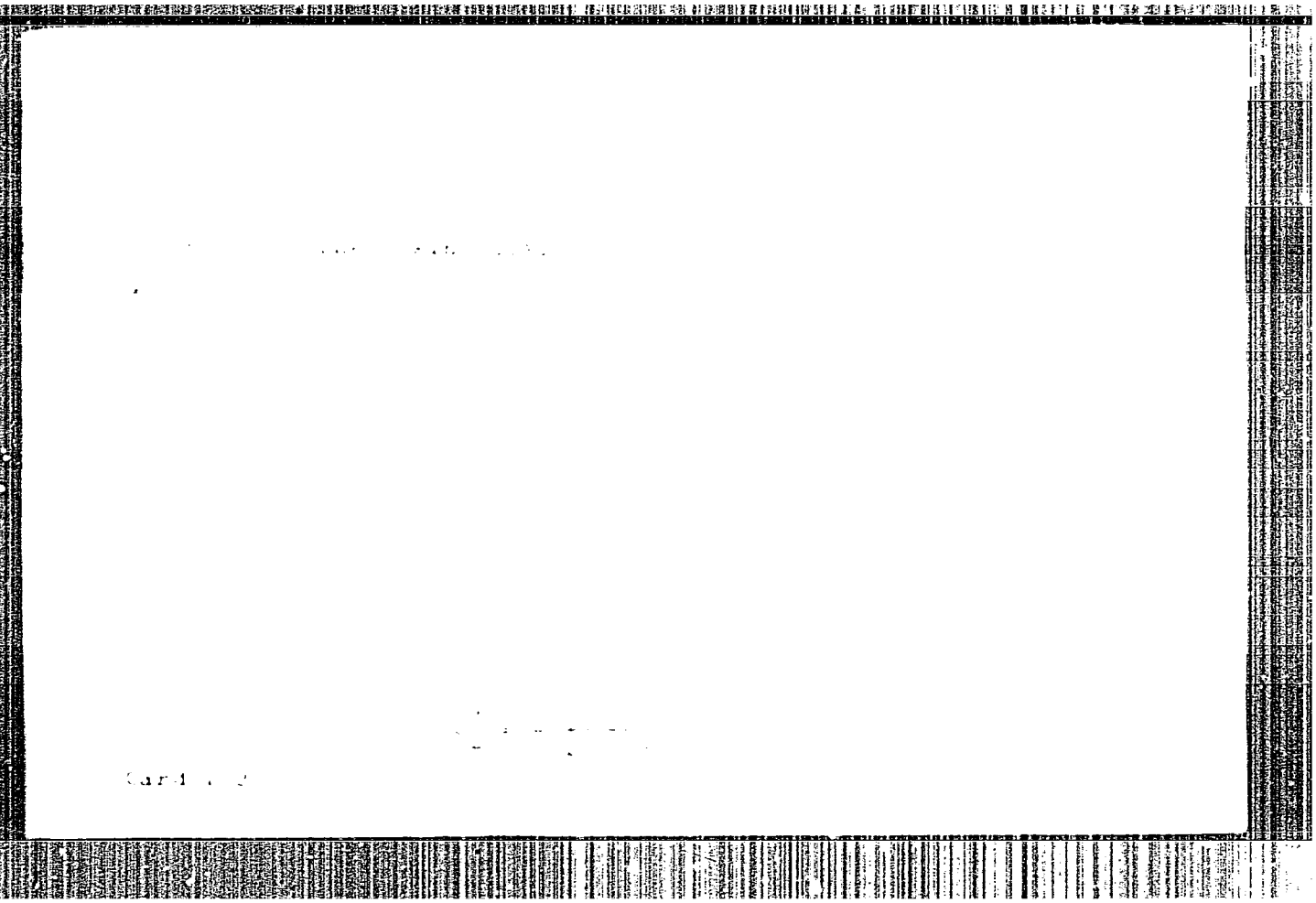
SEREDENKO, M.M.; GLAMAZDA, A.D.; KHOTIMCHENKO, M.M.; SEEVCHENKO, Ye.O.; RUDOY, P.Yu.; KHARCHENKO, P.F.; KHRAMOV, O.O.; GURIKOVA, V.O.; GURELIK, L.Ye.; RIZHKOV, I.I.; ZHUKERMAN, O.P.; NIKOLAYEVA, I.V.; KOROBKO, V., redaktor; LAPCHENKO, K., tekhnichniy redaktor

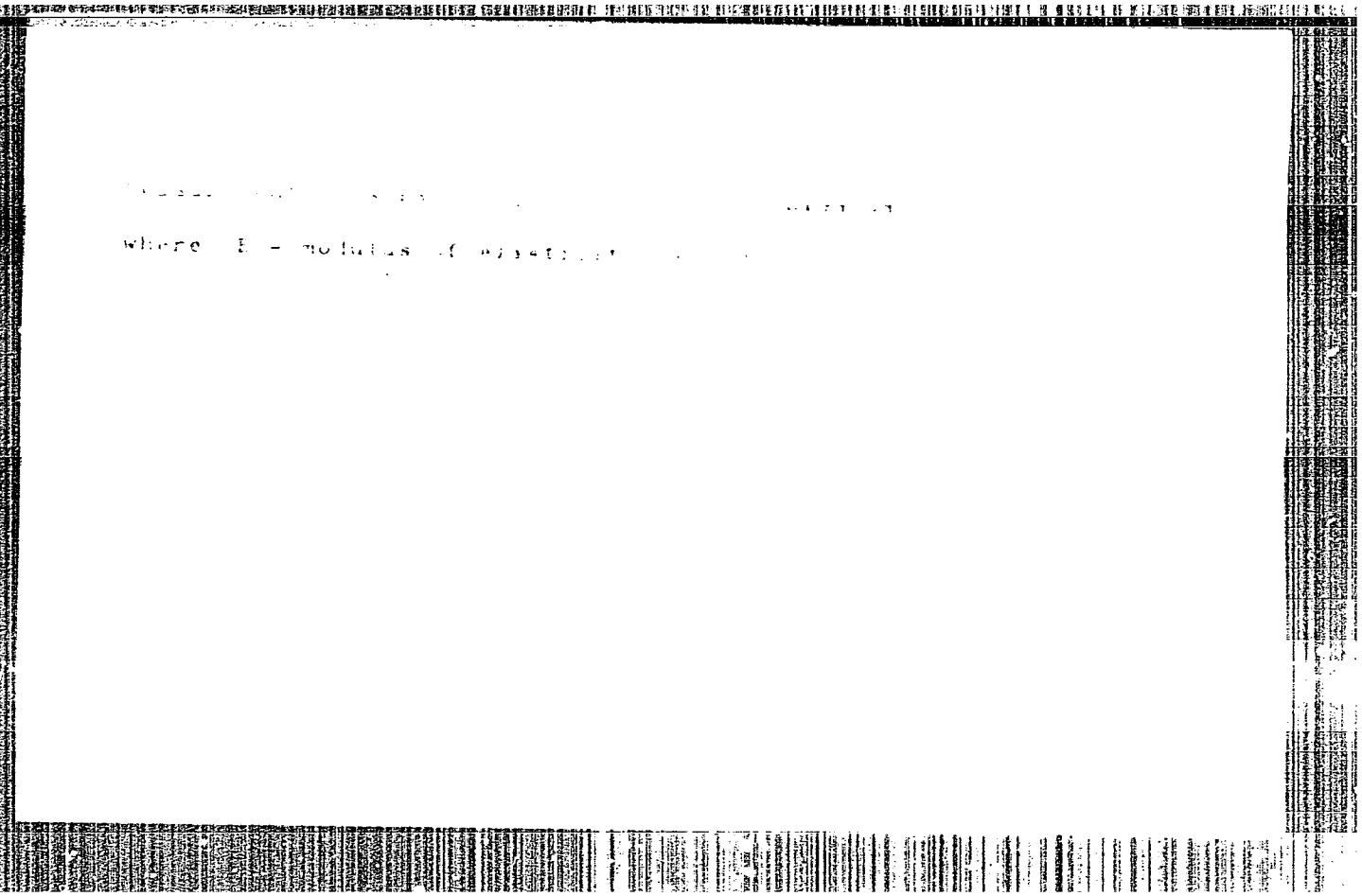
[Industry of the Soviet Ukraine during 40 years, 1917-1957] Promyslovist' Radians'koi Ukrainy za 40 rokiv (1917-1957). Kyiv, Derzh.vyd-vo polit.lit-ry URSR, 1957. 330 p. (MLRA 10:10)

1. Akademiya nauk URSR, Kiyev. Institut ekonomiki.
(Ukraine--Industries)

ZHEREBKIN, G.P. [Zherebkin, H.P.]

Progressive forms of production organization and their efficacity in the food industry. Khar. prom. no.4:3-9 O-D '65. (MIRA 18:12)





AMOSOV, N.N.; DUBIN, A.S.; ZUBKOV, V.A.; STARTSEV, V.I.; TOKAREV, Yu.S.; SHKARATAN, O.I.; KURTYNIN, M.S., red.; ZHEREBKINA, D.I., red.; LEVONEVSKAYA, L.G., tekhn. red.

[A generation of shock workers; a collection of documents and materials on socialist competition in Leningrad industrial plants in 1928-1961] Pokoleniia udarnikov; sbornik dokumentov i materialov o sotsialisticheskom sorevnovanii na predpriiatiiakh Leningrada v 1928-1961 gg. Leningrad, Lenizdat, 1963. 454 p. (MIRA 16:9)

1. Leningrad. (Province) Gosudarstvennyy arkhiv Oktyabr'skoy revolyutsii i sotsialisticheskogo stroitel'stva.
(Leningrad--Socialist competititon)

LAKATOSH, Boris Konstantinovich, dotsent, kand. tekhn. nauk; ZHEGHEDKOV, I.V., red.; PAVLICHENKOV, M.I., tekhn. red.

[Efficient utilization of wood] Ratsional'noe ispol'zovanie drevesiny. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1957. 52 p. (MIRA 11:8)
(Woodworking)
(Wood waste)

AUTHORS: Ginzburg, D. B., Doctor of Technical Sciences, Zherebin, S. I. 137/72-58-7-2/19

TITLE: Rationalization of the Fuel Economy of the Gor'kiy Glass Works (Ratsionalizatsiya toplivnogo khozyaystva Gor'kovskogo stekol'nogo zavoda)

PERIODICAL: Steklo i keramika, 1958, Nr 7, pp. 3-8 (USSR)

ABSTRACT: Measures, the introduction of which is intended within 2 to 3 years, are investigated. The increase of the gas heating power, as well as the suspension of the conduction of the phenol containing waste waters into the river Volga are considered to be urgent. The gas heating power required for obtaining a certain output of glass mass, as well as the dependence of the efficiency of the kiln on the output of glass mass are given in figure 1. It is intended to increase the heating power of the generator gas by the addition of propane-and butane gas. Some properties of these gases are given in table 1 and are further described. The scheme of a device for the storage and transportation of a propane-butane mixture is shown in figure 2. The dependence of the gas yield and its heating power on the humidity content of peat may be seen in figure 3. The quanti-

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tative ratio between the propane-butane mixture and the generator gas at various schemes of gas purification and utilization of tar in dependence on the humidity content of peat and on the heating power required by the mixture is given (Figs 4 to 9). Furthermore, 4 variants of using undried gas are given and described. The possibility and suitability of the drying of peat by means of exhaust gases was found by tests carried out by the Institute of Power Engineering AS of the BSSR (AS Belorussian SSR) (I.A. Lyuboshits and I.T. El'perin/Ref 1) and by the Institute of Gas Utilization, AS USSR (A.T. Tishcherko / Ref 2). For conveying the tar to the nozzle burner, the use of an oil-pumping outfit developed by TsNIITMash (Fig 10) is considered. The construction of the nozzle burner in which the fuel is sprayed by highly calorific gas, was proposed by the metallurgists N.N. Dobrokhotov and N.N. Karp (Ref 1). It is also recommended to try out the nozzle burner developed by N.A. Zakharikov and A.I. Rozhanskiy at the Institute of Gas Utilization AS USSR (Ref 1). Conclusions: The heating power of peat-generator gas may be increased by the addition of a propane-butane mixture and by artificial peat

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drying. In the case of an enrichment of the gas by propane-butane and a utilization of the tar by burning in the kiln, a wet gas purification and draining of the waste waters may be dropped. The application of the heat from exhaust gases is of great importance for the drying of peat. There are 11 figures, 2 tables, and 4 Soviet references.

1. Glass--Production 2. Fuels--Costs 3. Gases--Properties

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21,5300 SOV/120-59-5-5/46

AUTHORS: Zherebin, Ye. A., Andreyev, L. G. and Timoshuk, D. V.

TITLE: Fast Neutron Spectrometer

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 29-32 (USSR)

ABSTRACT: The spectrometer is based on the principle put forward by Mozly and Shoemaker in Ref 1 and is illustrated schematically in Fig 1. The detecting system consists of two scintillation counters, a proton proportional counter and a collimator. The detecting system is placed in a common jacket filled with methane, which is the working gas of the proton counter. The neutron beam n is incident on a crystal phosphor 1 (tolane) which is the source of recoil protons in the spectrometer. The collimator 5 selects the recoil protons from the crystal 1 and lets them through into the proton counter 3,4 and the crystal phosphor 2 (tolane) of the other scintillation counter. The recoil protons spend almost all their energy in the crystals of the two scintillation counters. The sum of the pulse heights from the scintillation counters is proportional to the energy of the neutron which gives rise to the particular recoil

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proton. The pulse from the output of the proton counter is used in a coincidence circuit to separate out the γ-rays. Pulses from the scintillation counters 1 and 2 and the proton counter are applied to the inputs of channels I, II and P of the electronic scheme of the spectrometer (Fig 2). Channels I and II of the scintillation counters are identical. The wide-band amplifiers 1 have switches giving two values of the amplification coefficient so that the work may be carried out in two energy intervals. The output cathode followers of these amplifiers feed the pulses into the delay lines 2 so that the scintillation pulses and the pulses from the proton counters are brought to the same point in time. A part of the signal is fed through the amplifiers 3 into the triple coincidence circuit 9. The pulses from the proton counter are fed into the amplifier 7, are shaped by the fast trigger 8 and are then fed into the triple coincidence circuit 9. A pulse will appear at the output of this circuit only if the recoil proton produced in the scintillator 1 (Fig 1) passes through the collimator 5, the proton counter 3,4 and enters the scintillator 2. The remaining parts of

Fast Neutron Spectrometer

the signal from the delay lines 2 are fed through the transmission circuits 4. The pulse from the triple coincidence circuit 9 opens the transmission circuit 4 for channels I and II. The total pulses are fed into the amplifier 14 and then to the amplitude analyser 15. The efficiency of the spectrometer is 1.31×10^{-4} for 14.5 MeV neutrons. Fig 3 gives the dependence of the efficiency on energy. As can be seen, the relation is linear. The resolution is 10% at 14.5 MeV. Fig 5 shows the neutron spectrum from a Po + Be source. The Po + Be source had an intensity of about 10^7 neutrons/sec. There are 6 figures and 4 references, 1 of which is Soviet and 3 English.

4

SUBMITTED: August 22, 1958

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SEREDENKO, M.M., doktor ekon. nauk; ALEKSANDROVA, V.P.; KUGUSHEV, M.F. [Kuhushev, M.F.]; SHEVCHENKO, Ya.O.; GLAMAZDA, A.D.[Hlamazda, A.D.]; ZABORSKAYA, Z.M.[Zabors'ka, Z.M.]; KHOTIMCHENKO, M.M. [Khotymchenko, M.M.]; YATSKOV, V.S.; MEDVEDEV, V.M.[Medvedlev, V.M.]; CHIRKOV, P.V.[Chyrkov, P.V.]; KHARCHENKO, P.F.; SOTCHENKO, Z.Ya.; PROFATILOVA, L.M.[Profatylova, L.M.]; MAULIN, M.O.; GORELIK, L.Ye.[Horelik, L.IE.]; RIZHKOV, I.I. [Ryzhkov, I.I.]; ZHEREBKIN, G.P.[Zherebkin, H.P.]; KHRAMOV, O.O.; LANDYSH, B.O., red.; ROZENTSVEYG, Ye.N.[Rozentsveih, IE.N.], tekhn. red.

[Economic efficiency of capital investments and the introduction of new machinery in industry]Ekonomichna efektyvnist' kapital'nykh vkladen' i vprovadzhenniia novoi tekhniky u promyslovosti. Kyiv, Vyd-vo Akad. nauk URSR, 1962. 260 p. (MIRA 16:2)

1. Akademiya nauk URSR, Kiev. Instytut ekonomiky.
(Capital investments) (Technological innovations)

KONSEVICH, Anton Ivanovich [Konsievych, A.I.], kand.ekonom.nauk; ZHEREBKIN, G.P. [Zherebkin, H.P.], kand.ekonom.nauk, otv.red.; GURENKO, V.A. [Hurenko, V.A.], red.

[Carrying out the resolutions on the development of stockbreeding as directed by the December Plenum of the Central Committee of the CPSU] Vykonaiemo rishennia hrudnevoho Plenumu TsK KPRS v dal'shomu pidnesenni tvarynnytstva. Kyiv, 1960. 39 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.6, no.12). (MIRA 13:9)

(Stock and stockbreeding)

KUZNETSOV, Aleksey Vasil'yevich; ZHEREBKINA, D.I., red.; TIKHOCHOVA, I.M., tekhn. red.

[Communist labor will triumph; from the experience of communist labor groups in Leningrad industries] Kommunisticheskii trud pobedit; iz opyta raboty kollektivov kommunisticheskogo truda promyshlennykh predpriiatii Leningrada. Leningrad, Lenizdat, 1961. 101 p. (MIRA 15:2)
(Leningrad—Socialist competition)

KULIKOV, Georgiy Petrovich; ZHEREBKOV, I.V., red.; MARINYUK, M.V., tekhn.red.

[Ceramic metals and speed cutting] Mineralokeramika i skorostnoe rezanie. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1958. 38 p.

1. Nachal'nik laboratorii rezaniya Novocherkasskogo elektrovozostroitel'nogo zavoda (for Kulikov).
(Cutting tools)

SAVENKO, Gennadiy Gavrilovich; ZHEREBKOV, I.V., red.

[Operation and maintenance of electrical equipment] Ekspluatatsiia i remont elektroinstrumenta. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1961. 59 p. (MIRA 18:4)

FOMICHEV, V.P., kand. tekhn. nauk; ARZHANOVSKOV, A.I., inzh.; ZHEREBKOV, I.V., red.

[Resistance of hard and frozen ground to cutting] Soprotivlenie rezaniiu tverdykh i merzlykh gruntov. Rostov-na-Donu, 1962. 38 p. (MIRA 17:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut po stroitel'stvu, Rostov-on-Don.

GOZULOV, A.I., doktor ekonom. nauk, prof.; SHUMILIN, P.G., kand. ekonom. nauk, dots.; SHESTAKOV, P.A., red.; SHNEYDERMAN, K.A., red.; TOROPCHIN, N.S., red.; ZHEREBKOV, I.V., red.; IVANOVA, R.N., tekhn. red.

[Rostov Province; nature, population, economy and culture] Rostovskaia oblast'; priroda, naselenie, khoziaistvo, kul'tura. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1961. 333 p. (MIRA 15:3)
(Rostov Province--Economic geography)

KUSMARTSEV, Vasiliy Sergeyevich; OBRAZTSOV, V.A., retsenzent; RAKOV, A.F., retsenzent; ZHERNEKOV, I.V., red.; ABRAMOVA, Ye.A., tekhn.red.

[Automatic control of production processes] Avtomatika proizvodstvennykh protsessov. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1960. 95 p. (MIRA 14:2)
(Automatic control)

IVANOV, V.A.; SOLODENKO, G.P.; GISSIN, I.M.; IGNATENKO, N.N.; ZHEREBKOV, I.V., red.; MARINYUK, M.V., tekhn.red.

[Over-all mechanization and automation at the Rostov Agricultural Machinery Plant] Kompleksnaia mekhanizatsiia i avtomatizatsiia na zavode Rostsel'mash. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1959. 185 p. (MIRA 13:10)
(Rostov-on-Don--Agricultural machinery industry)
(Automation)

KRASUSKIY, Yevgeniy Stanislavovich; ZHEREBKOV, I.V., red.; MARINYUK, M.V., tekhn.red.

[Silicalcite, a local building material] Silikal'tsit - mestnyi stroitel'nyi material. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1959. 62 p. (MIRA 13:6)

(Sand-lime products)

ALEKSANDROV, Petr Kuz'mich; ZHEREBKOV, I.V., red.; POPOVA, N.A., tekhn.red.

[Aid for a young electric welder] V pomoshch' molodomu elektrosvarshchiku. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1959. 59 p. (MIRA 13:5)
(Electric welding)

ZELENOV, Aleksandr Ivanovich, dotsent, kand.tekhn.nauk; YELISEYEV, P.G., retsenzent; ZHEREBKOV, I.V., red.; ABRAMOVA, Ye.A., tekhn.red.

[Welding and surfacing of cast-iron parts] Svarka i naplavka chugunnykh detalei. Rostov, Rostovskoe knizhnoe izd-vo, 1960. 115 p. (MIRA 14:3)

1. Rostovskiy institut inzhenerov zheleznodorozhnogo transporta (for Zelenov).
(Cast iron--Welding) (Hard facing)

DMITRIYEV, Oleg Vladimirovich; ZHERDEBKOV, I.V., red.; MARINYUK, M.V., tekhn.red.

[Reinforcement wires with large cross sections] Struny bol'shogo secheniia. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1960. 146 p. (MIRA 14:2)

1. Nauchno-issledovatel'skiy institut po stroitel'stvu v Rostove-na-Donu Akademii stroitel'stva i arkhitektury SSSR (for Dmitriyev).
(Reinforced concrete) (Wire)

SHAKHBAZYAN, Shavarsh Abramovich; ZHEREBKOV, I.V., red.; MARINYUK, M.V., tekhn.red.

[Manual for young milling-machine operators] V pomoshch' molodomu frezerovshchiku. Rostov, Rostovskoe knizhnoe izd-vo, 1959. 94 p. (MIRA 12:12)

(Milling machines)

DUROV, Svyatoslav Alekseyevich, prof., doktor khim.nauk; BULYGIN, S.I., red.; ZHERBAKOV, I.V., red.; MARINYUK, M.V., tekhn.red.

[Geometrical method in hydrochemistry] Geometricheskii metod v gidrokhimii. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1959. 193 p. (MIRA 12:12)

(Water--Composition)

SHORYGINA, A.V.; LUTUGHOVA, S.A.; ZHEREBKOV, I.V., red.

[Utilization of the wastes of phenol-acetone production] Ispol'zovanie otkhodov fenolo-atsetonovogo proizvodstva. Rostov-na-Donu, Rostovskii promstroinilproekt, 1964. 38 p. (MIRA 18:5)

DAVYDENKO, Il'ya Danilovich, kand. tekhn. nauk, laureat Leninskoy i Stalinskoy premiy; ZHEREBKOV, I.V., red.; ALYAKRITSKAYA, L.S., tekhn. red.

[Manual on welding electrodes] Spravochnik po svarochnym elektrodam. Rostov, Rostovkoe knizhnoe izd-vo, 1961. 227 p. (MIRA 14:8)

(Welding—Equipment and supplies) (Electrodes)

CHERKASOV, Anatoliy Nikolayevich; ZHEREBKOV, I.V., red.; CHEKANOV, A.A., tekhn.red.

[Methods for solving statics problems] Metodika resheniia zadach po statike. Izd.2., dop. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1958. 114 p. (MIRA 12:5)
(Statics)

DUBROVSKIY, Serafim Sergeyevich; SEL'VANYUK, Mikhail Igorevich; ZHEREBKOV, I.V., red.; ABRAMOVA, Ye.A., tekhn.red.

[Manual for workers in mechanized mines] V pomoshch' prokhodchiku mekhanizirovannogo zaboia. Rostov, Rostovskoe knizhnoe izd-vo, 1959. 91 p. (MIRA 14:2)
(Coal mines and mining)

15(2)

AUTHORS: Ginzburg, D. B., Doctor of Technical Sciences SOV/72-59-7-9/19
Matveyev, M. A., Zherebin, S. I.

TITLE: Increase of the Working Efficiency of Glass Melting Furnaces by Sealing the Regenerative and Recuperative Systems (Povysheniye effektivnosti raboty steklovarennykh pechey putem uplotneniya regenerativnoy i rekuperativnoy sistem)

PERIODICAL: Steklo i keramika, 1959, Nr 7, pp 26 - 30 (USSR)

ABSTRACT: The authors of this paper and I. V. Lebedeva (Footnote 1) found that the air excess in the tank furnace of the Gor'kiy glassworks amounts to 15% and of the Gusevo crystal works amounts to 23%. D. B. Ginzburg, M. Ya. Magidson (Footnote 2) found in the glassworks imeni Kalinin an air excess of $\alpha = 1.2$. Therefore the authors of this paper do not agree with the statement of V. A. Krechmar and M. G. Stepanenko (Footnote 4) that the burning in the furnace in the glassworks takes place with an air excess of $\alpha = 1.5$ till 1.7. The amount of gas passing the regenerators is calculated by means of equations which are given and explained. These informations for the Gor'kiy works were published already earlier, for the Gusevo crystal works they are represented in the figure. As it may be seen from it it is possible to attain considerable savings by making

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Increase of the Working Efficiency of Glass Melting Furnaces SOV/72-59-7-9/19
by Sealing the Regenerative and Recuperative Systems

sealing tight the regenerative system of a glass melting furnace among it 5 to 6% of the fuel consumption. The authors of this paper elaborated and tested two kinds of coatings, the silicate (OZh-4)- and the magnesia coating (OM-8). Their composition, manufacturing method and properties are exactly described. The coatings OM-8 and OZh-4 proved to be the best also in the sealing of surfaces with temperatures up to 300°. On account of the experience of the Gor'kiy glassworks the coating OZh-4 can be recommended for sealing burners, regenerators and recuperators of the glass melting furnaces. There are 1 figure and 6 Soviet references.

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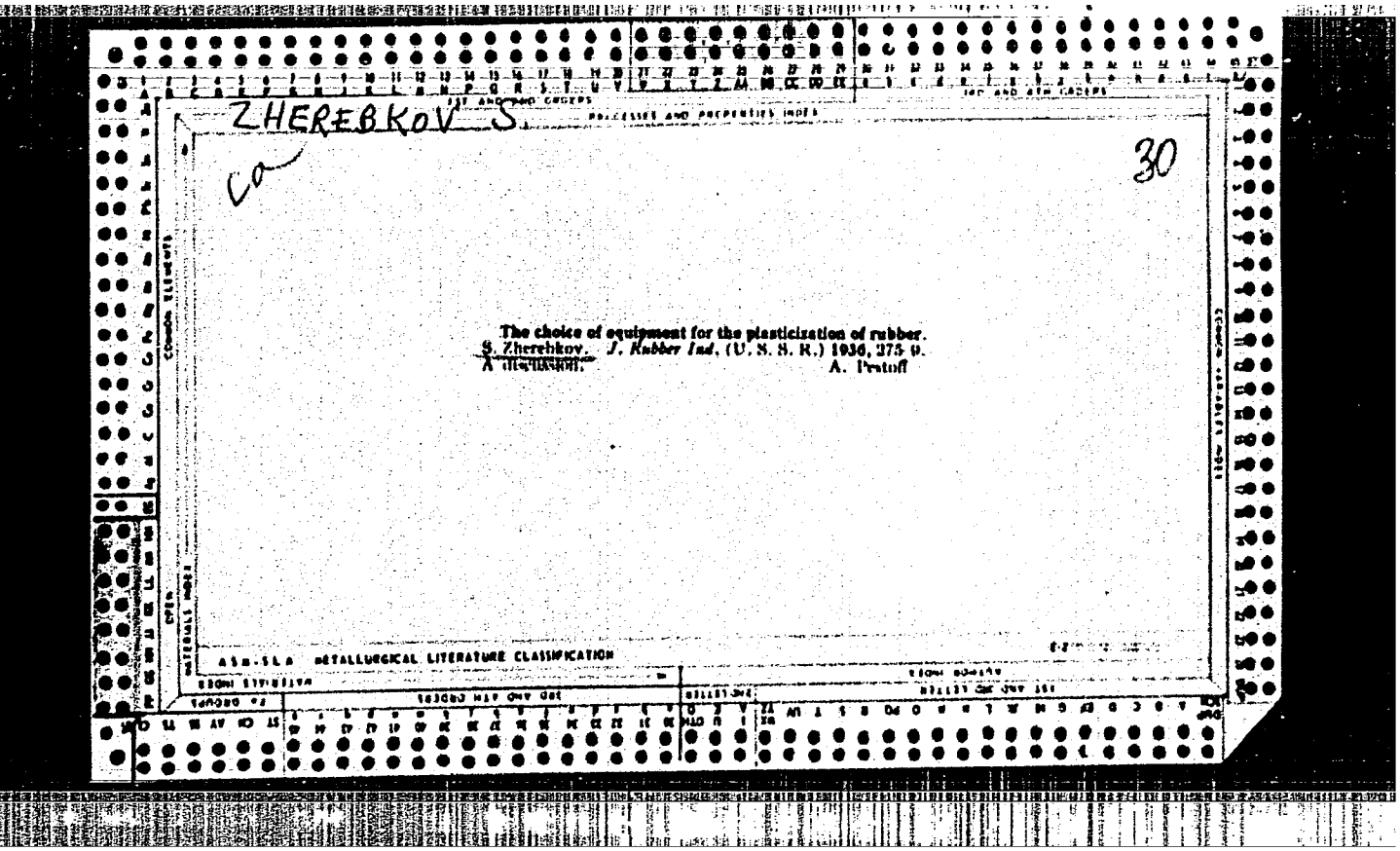

ZHEREBKOV, Serafim Konstantinovich; RABUSHKINA, S.I., redaktor; KORNEYEVA, V.I., tekhnicheskiy redaktor

[The holding power of resins applied to metals] Kreplenie reziny k metallam. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1956. 147 p. (MLRA 9:8)

(Gluing) (Adhesives) (Resins, Synthetic)

ZHEREBKOV, S.K.

USSR/Chemistry of High Molecular Substances. F

Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957, 19423.

Author : B.V. Deryagin, S.K. Zherebkov, A.M. Madvedeva.
Inst : -
Title : Concerning the Part of Diffusion of Polymer Chains in the Mechanism of Adhesion and Autohesion (Sticking Together) of Rubbers.

Orig Pub : Kollod. Zh., 1956, 18, No 4, 404-412.

Abstract : With a view to study the influence of relaxation or diffusion processes on autohesion, the autohesion of HK and SKB was investigated, using the method of crossed quartz threads covered with rubber films (Kolloid. zh., 1950, 12, 431; RZhKhim, 1956, 32140). It was shown that the energy of autohesion sharply increased in case of films from 0 to 0.1 and above 0.5 thick, which was connected with the increase of van der Waal's forces in the first case, and with the facilitation of formation of platforms at easily de-

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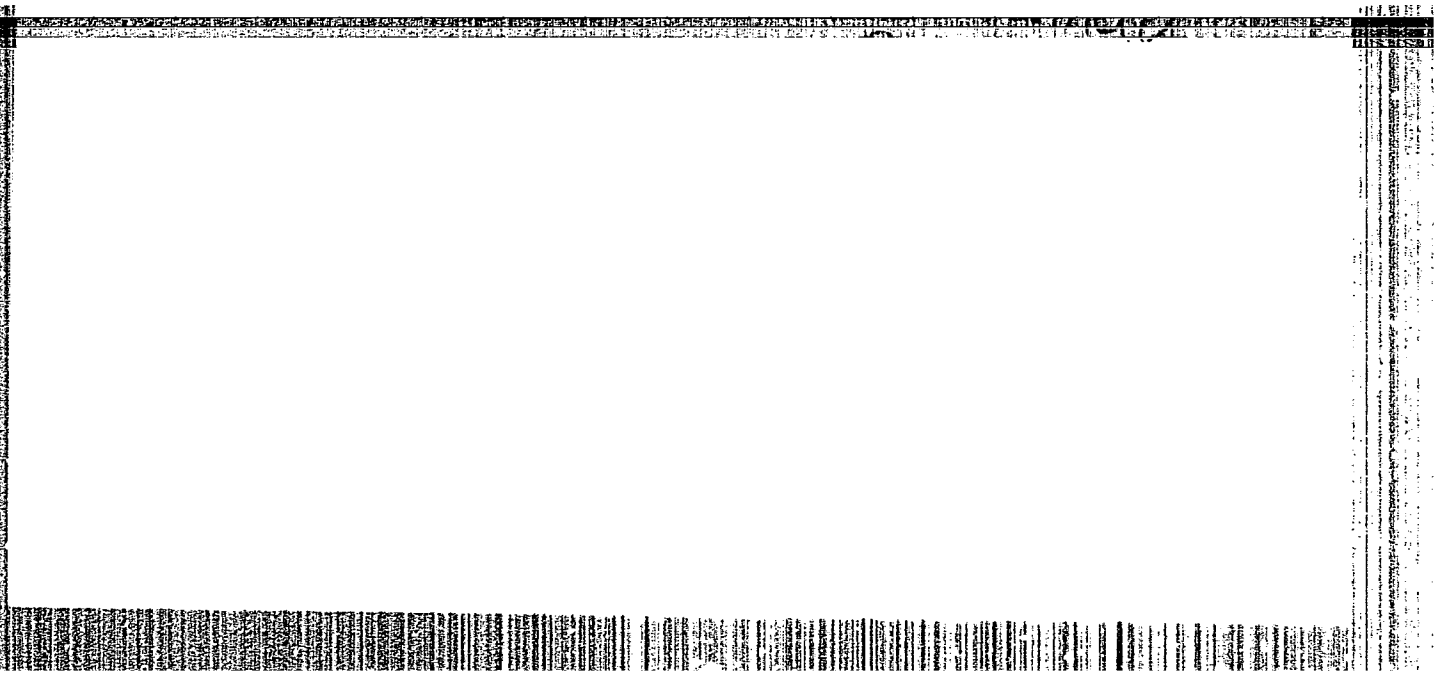
Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957, 19423.

formed thick films in the second case. In the thickness interval from 0.1 to 0.5μ, the autohesion energy did not depend on the film thickness. The increase of the contact duration increased the autohesion energy only if the film thickness was >0.5μ from which it followed that the diffusion processes did not play any part in the autohesion of thin films. During the study of the correlation of the combinability of various rubbers and their adhesion one to another and autohesion, the measurement of the shearing strength of rubber adhesion was carried out and it was shown that in case of butyl rubber, the diffusion processes did not play a great part and that its adhesion strength was determined by the area of the true contact depending on the mechanical properties and by the influence of forces connected with the double electrical layer, which played an essential part at the measurement of the work of tearing by the method of exfoliation. In case of NK, SKS-30, SKS-26,

Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957, 19423.

SKB and nairite, the diffusion processes play an important part, which is confirmed by the correspondence of the adhesion magnitude to the combinability of rubbers, and it is most reliable to characterize the superficial combinability of rubbers by the similitude of their polarity. At this occasion, $T_{12} / T_{11} > 1$ in case of the same polarity, and $T_{12} / T_{11} < 1$ in case of different polarity, where T_{11} and T_{12} are the measured shearing resistance of identical and different rubbers respectively.



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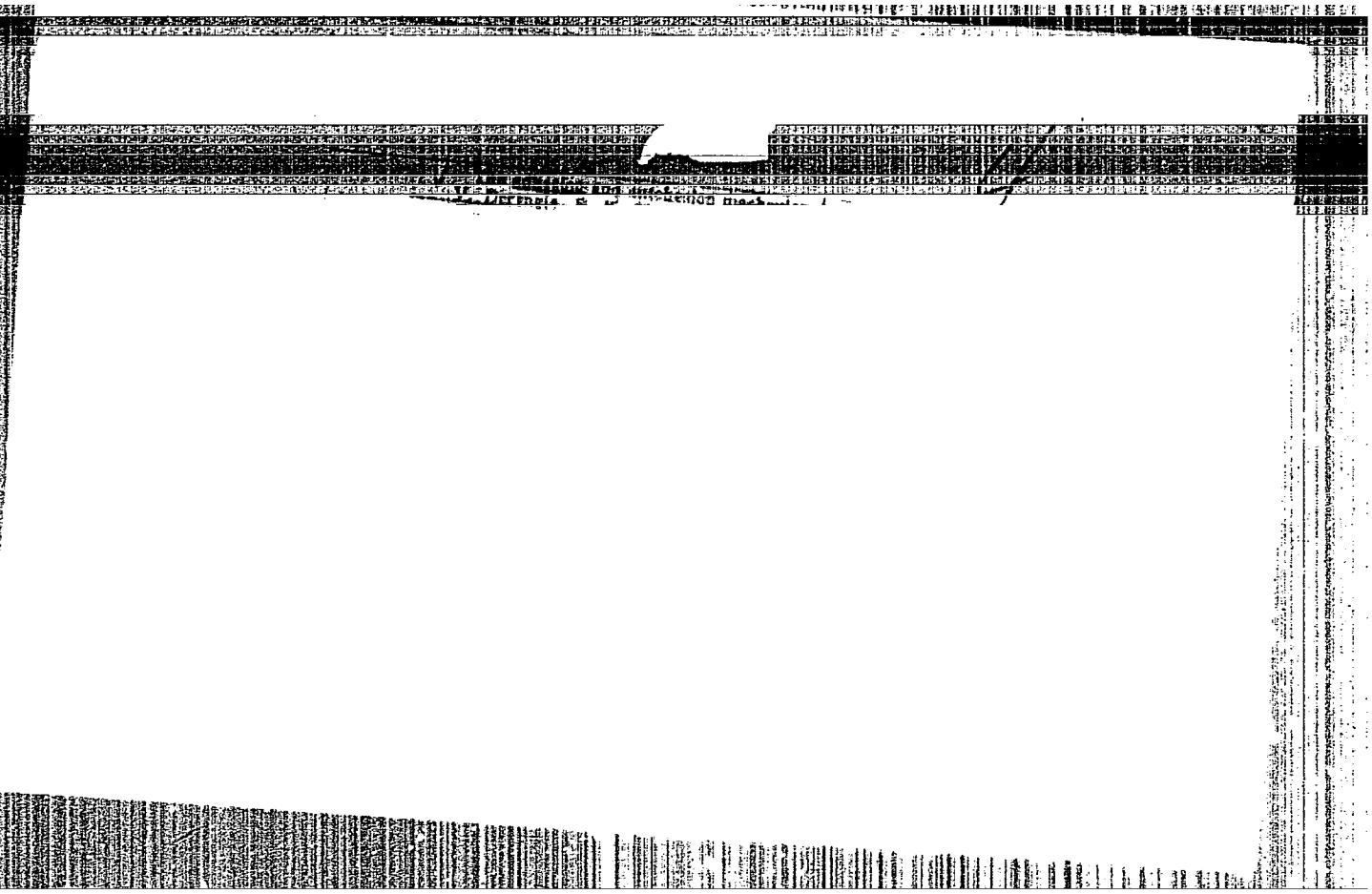


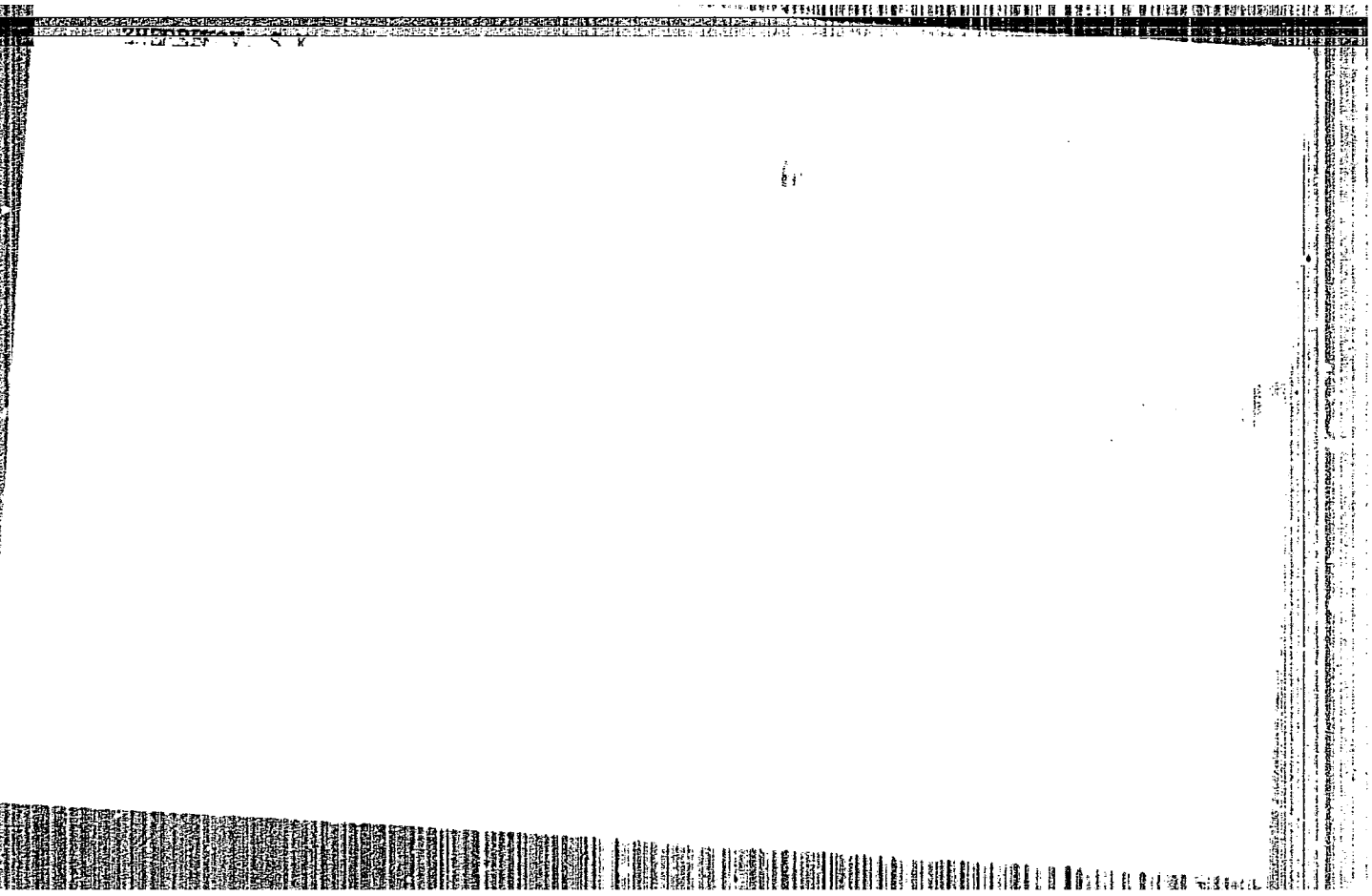
Zherebkov, S. K.

DERYAGIN, B.V., ZHEREBKOV, S.K.; MEDVEDEVA, A.M.

Mechanism of adhesion and autohesion in rubbers. Dokl. AN SSSR 111 no.6:1267-1270 D '56. (MLRA 10:3)

1. Chlen-korrespondent AN SSSR (for Deryagin). 2. Nauchno-issledovatel'skiy institut resinovoy promyshlennosti i Institut fizicheskoy khimii Akademii Nauk SSSR.

(Rubber) (Adhesion)



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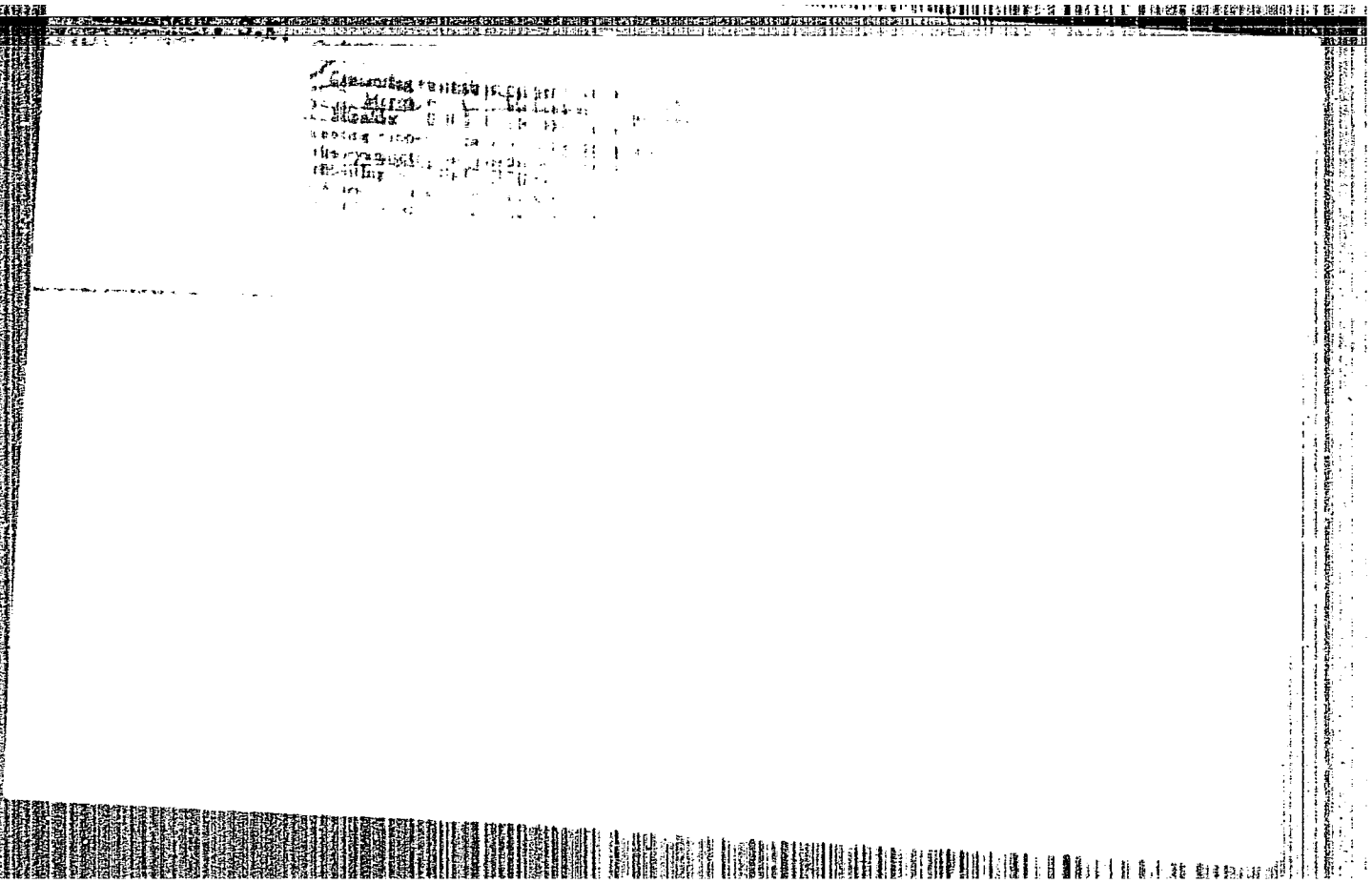

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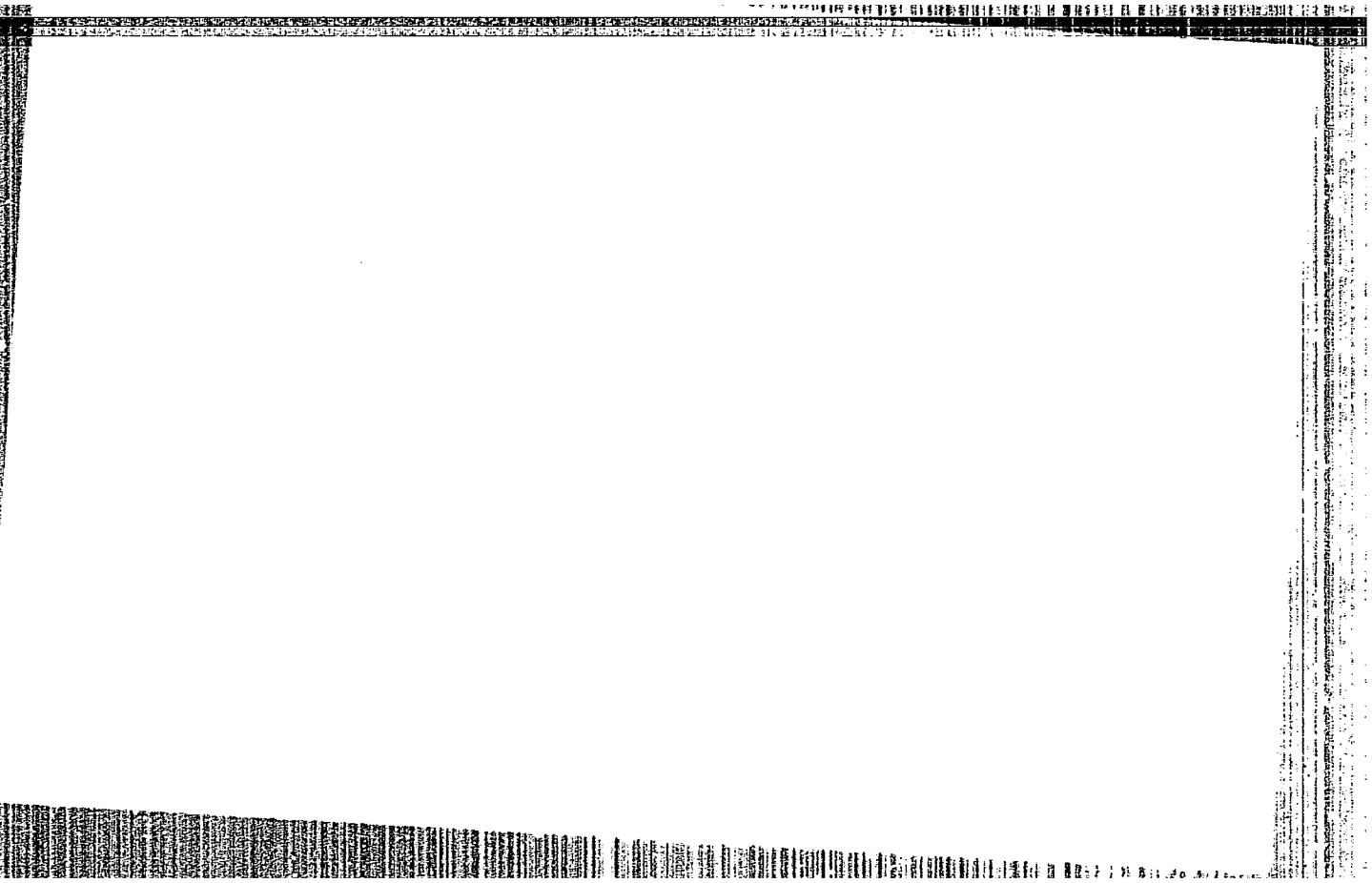
TUMANOV, A.T., glav. red.; VYATKIN, A.Ye., red.; GARBAR, M.I., red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A., red.; KISHKIN, S.T., red.; KISHKINA-RATNER, S.I., doktor tekhn. nauk, red.; PANSHIN, B.I., kand. tekhn. nauk, red.; ROGOVIN, Z.A., red.; SAZHIN, N.P., red.; SKLYAROV, N.M., doktor tekhn. nauk, red.; FRIDLYANDER, I.N., doktor tekhn. nauk, red.; SHUBNIKOV, A.V., red.; SHCHERBINA, V.V., doktor geol.-miner. nauk, red.; SHRAYBER, D.S., kand. tekhn. nauk, red.; GENEL', S.V., kand. tekhn. nauk, red.; VINOGRADOV, G.V., doktor khoz. nauk, red.; NOVIKOV, A.S., doktor khoz. nauk,red.; KITAYGORODSKIY, I.I., doktor tekhn. nauk, red.; ZHEREBKOV, S.K., kand. tekhn. nauk, red.; BOGATYREV, P.M., kand. tekhn. nauk,red.; SANDOMIRSKIY, D.M., D.M., kand. tekhn. nauk, red.; BUROV, S.V., kand. tekhn. nauk, red.; POTAK, Ya.M., doktor tekhn.nauk, red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I., kand.tekhn. nauk, red.; YAMANOV, S.A., kand. tekhn. nauk, red.; SHEFTEL', I.A., kand. khoz. nauk, st. nauchn. red.; BABERTSYAN, A.S., inzh., nauchn. red.; BRAZHNIKOVA, Z.I., nauchn. red.; KALININA, Ye.M., mlad. red.; SOKOLOVA, V.G., red.-bibliograf; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology] Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Moskva, Sovetskaia entsiklopediia.
Vol.1. Abliatsiia - korroziia. 1963. 416 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Kishkin).



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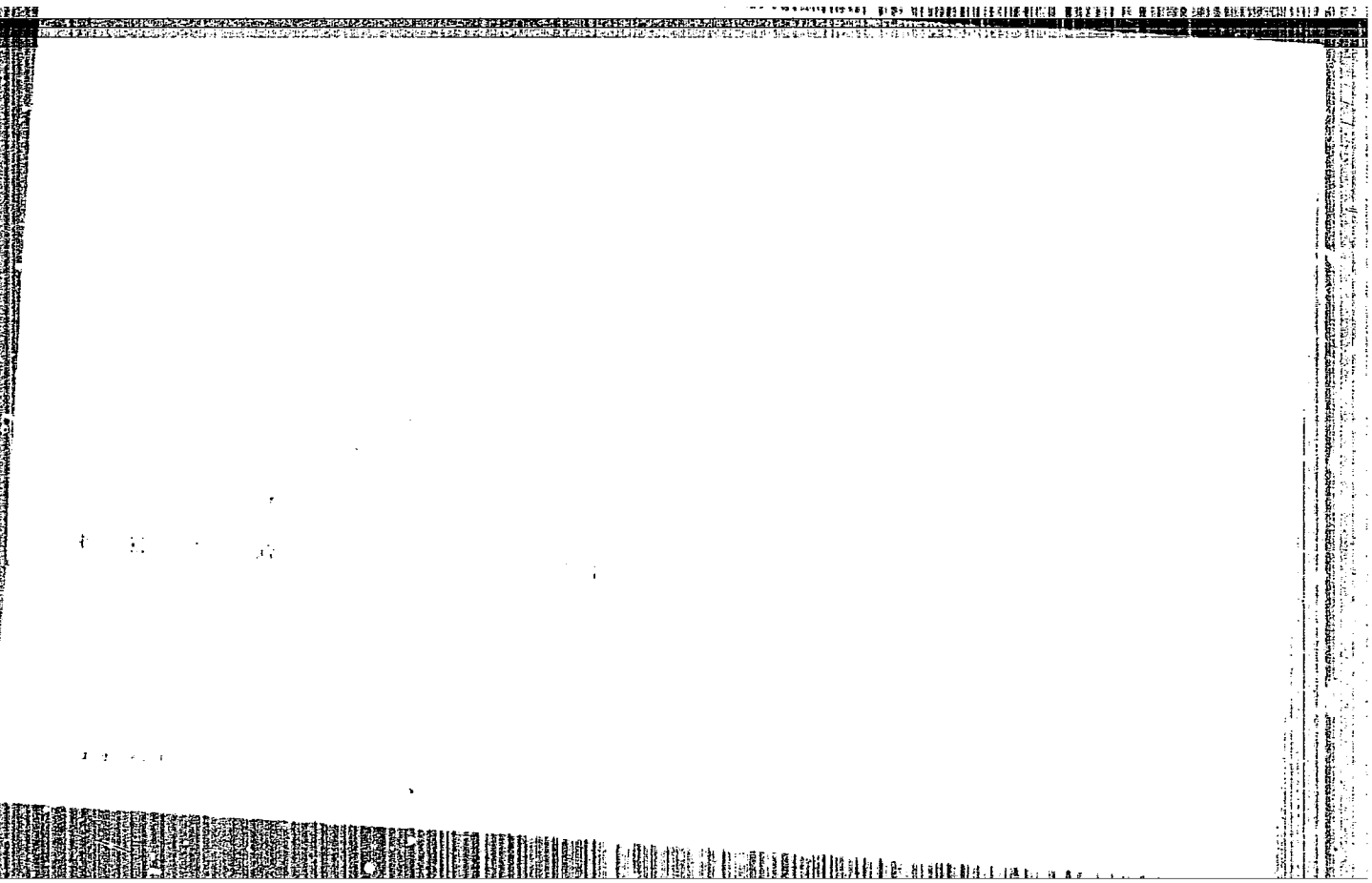

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R002064720003-7"

ACC NR: AM6015391 Monograph

HM/JD/NW

Zherebkov, Serafim Konstantinovich

Rubber to metal bonding (Kreplenlye reziny k metallam) 2d ed., rev. and enl. Moscow, Izd-vo "Khimiya", 66. 0346 p. illus., biblio., index. 5,300 copies printed.

TOPIC TAGS: metal jointing, metal gluing, metal surfacing, natural rubber, synthetic rubber, metal bonding, adhesive bonding, bonding material

PURPOSE AND COVERAGE: This book describes the methods of rubber to metal bonding used in the industry. The agents of bondings, the methods determining the strength of rubber to metal bonding and the modern theoretical concepts on the mechanisms of bonding are described. The book is intended for engineering and technical workers of the plants manufacturing rubber to metal bonded articles. It can also be used by researchers working in the field of rubber to metal bonding.

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SUB CODE: 11 SUBM DATE: 18Dec65/ ORIG REF: 194/ OTH REF: 183

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DERYAGIN, B.V.; KARASEV, V.V.; MEDVEDEVA, A.M.; ZHERUBKOV, S.K.

Electron emission on the loosening of vulcanized rubber from metal and glass in a vacuum. Koll. zhur. 27 no.1:35-41 Ja-F '65.

(MIRA 18:3)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti i Institut fizicheskoy khimii AN SSSR, Moskva.

BOGAYEVSKIY, A.P.; ZHEREBKOV, S.K.; GROZHAN, Ye.M.; POLYAKOVA, L.M.; CHELMODEYEV, A.D.

Investigating the chemical stability of the SKI-3 isoprene rubber and of the rubber and ebonite based on it. Kauch. i rez. 23 no.1:3-7 Ja '64. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

TUMANOV, A.T., glav. red.; VYATKIN, A.Ye., red.; GARBAR, M.I., kand. tekhn. nauk, red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A., red.; KISHKIN, S.T., red.; KISHKINA-RATNER, S.I., doktor tekhn. nauk, red.; PANSHIN, B.I., kand. tekhn. nauk, red.; ROGOVIN, Z.A., doktor khoz. nauk, red.; SAZHIN, N.P., red.; SKLYAROV, N.M., doktor tekhn.nauk, red.; FRIDLYANDER, I.N., doktor tekhn. nauk, red.; SHUBNIKOV, A.V., red.; SHCHERBINA, V.V., doktor geol.-miner. nauk, red.; SHRAYBER, D.S., kadn. tekhn.nauk, red.; GENEL', S.V., kand. tekhn.nauk, red.; NOVIKOV, A.S., doktor khoz. nauk, red.; KITAYGORODSKIY, I.I., doktor tekhn. nauk, red.; ZHEREBKOV, S.K., kand. tekhn. nauk, red.; BOGATYREV, P.M., kand. tekhn. nauk, red.; BUROV, S.V., kand. tekhn. nauk, red.; POTAK, Ya.M., doktor tekhn. nauk, red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I., kand. tekhn. nauk, red.; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology] Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Glav. red. Tumanov, A.A. Moskva, Sovetskaia entsiklopediia. Vol.1. Abliatsiia - Korroziia. 1963. 416 p. (MIRA 17:2)

1. Chlen-korrespondent AN SSSR (for Kishkin).

BOGAYEVSKIY, A.P.; ZHEREBKOV, S.K.; GROZHAN, Ye.M.; CHELMODEYEV, A.D.

Investigating the chemical stability of some natural rubbers and rubber goods produced on their base. Kauch.i rez. 21 no.12:11-14 D '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber—Testing)

KOROLEV, A.Ya.; ZHEREBKOV, S.K.; BORISOVA, F.K.; MEDVEDEVA, A.M.; GROZHAN, Ye.M.

Bonding of fluoroplast 4 to rubber. Plast.massy no.5:37-39 '62. (MIRA 15:4)
(Fluoroplast) (Rubber) (Adhesion)

ZHEREBKOV, S.K.; MAYOROVA, A.S.; GROZHAN, Ye.M.; KONDORSKAYA, V.A.

Using rubber and ebojite for the protection of equipment from the action of chemical media. Standartizatsiia 26 no.2:37-38 F '62. (MIRA 15:2)

(Rubber coatings)

36900

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B110/B101

15.9160

AUTHORS: Korolev, A. Ya., Zherebkov, S. K., Borisova, F. K., Medvedeva, A. M., Grozhan, Ye. M.

TITLE: Gluing of ftoroplast-4 to rubbers

PERIODICAL: Plasticheskiye massy, no. 5, 1962, 37-39

TEXT: Ftoroplast-4 (polytetrafluoro ethylene) was glued to organofluorine and acrylonitrile rubbers. For this purpose the surface, degreased by means of gasoline, was modified with a sodium-naphthalene complex activated by addition of 2 g-atom Na metal per mole naphthalene in 1 liter tetrahydrofuran. After 40 sec treatment of the film, rinsing in acetone and water, and 30 min drying at 100°C, the surface color turned from milky white to gray-brown. The contact angle of wetting with water dropped here from 106 to 45-55°. Crude rubbers were pasted on using glue on the basis of nitrile rubber and thermoreactive resin (ФЭН-1 (FEN-1)). The strength of gluing of organofluorine and acrylonitrile rubbers to ftoroplast-4 with smooth surface was 0.56-0.92 kgf/cm, with rough surface 2.55-5.60 kgf/cm. The gluing of СКН-26 (SKN-26) rubber to

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Gluing of ftoroplast-4 to rubbers

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ftoroplast-4 with rough surface was stable against heat aging at 100 and 170°C and 50 hr effect of АМГ-10ф (AMG-10f) medium at 170°C. By means of FEN-1, ftoroplast-4 films can also be glued to one another, to vulcanized organofluorine and acrylonitrile rubbers, and to metals, the heat treatment lasting for 60 min at 100°C. Glued joints with ftoroplast-4 with rough surface were destroyed within the rubber. There are 5 tables.

Card 2/2

MEDVEDEVA, A.M., DERYAGIN, B.V., ZHEREBKOV, S.K.

Study of the adhesion phenomena in the bonding of rubber to metal with leikonat glue. Part 3: Interaction between sodium butadiene rubber and triisocyanatotriphenylmethane. Koll. zhur. 22 no.2:217-222 Mr-Ap '60. (MIRA 13:8)

1. Institut fizicheskoy khimii AN SSSR, Moskva.
(Butadiene) (Methane)

S/138/59/000/07/03/009

AUTHORS: Kaluzhenina, K. F., Zherebkov, S. K., Sukhotina, T. M., Sergeyicheva, V. S.

TITLE: On the Properties of Mixtures and Vulcanizates Based on Bromobutyl Rubber

PERIODICAL: Kauchuk i Rezina, 1959, No. 7, pp. 13-18

TEXT: The authors outline the valuable properties of butyl rubber and explain its application in the production of rubber articles. The chemical and physical properties of vulcanizates made of butyl rubber are due to their low non-saturation and also to the presence of regularly distributed side methyl groups, linked with the densely packed linear chains, as described in Ref. 1, by R. Thomas and L. King. The properties of the vulcanizates made of the butyl rubber are described, and how these properties are applied in the production of various rubberized articles. However, the disadvantage of the butyl rubber mixtures is the slow vulcanization and the incompatibility of the butyl rubber with other non-saturated polymers, as well as its poor adhesion to various metals. Some of these disadvantages could be eliminated by the use of bromobutyl rubber. According to the authors, there are two methods for the production of bromobutyl

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On the Properties of Mixtures and Vulcanizates Based on Bromobutyl Rubber

rubber: 1) by brominating the butyl rubber on the rollers with bromine, 2) by brominating the butyl rubber with ethyl bromine in a solution of ethyl chlorine. A comparison is made of the properties of domestic bromobutyl rubber produced by the two methods with those of the imported bromobutyl rubber of the Hiker (Khaykar) 2202 trade mark, and the possibility of combining the bromobutyl rubber with other polymers is shown. When combining the domestic bromobutyl rubber with natural rubber, rubber is obtained with satisfactory properties. The compatibility of the bromobutyl rubber with other polymers makes it possible to cement rubber onto metal. The experimental procedure undertaken is outlined in detail and the technological and physico-mechanical properties of the vulcanizates are determined and given in Table 1. The highest stability of the adhesion is reached between the ply of natural rubber or butyl rubber and a ply of a mixture of imported bromobutyl rubber, combined with natural rubber; a somewhat lower stability is reached with a ply of a mixture based on the domestic bromobutyl rubber, combined with the natural rubber. Adhesion to metal of the rubber can be accomplished by using the ply of a mixture based on the bromobutyl rubber. The possibility of fixing the bromobutyl mixtures to metal by the hot method was studied. The results of the tests are given in Table 7. The results of the

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Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 9, p 562 (USSR)

AUTHORS: Kaluzhenina, K.F., Skuba, I.A., Zherebkov, S.K., Medvedeva, A.M.

TITLE: The Increase in the Adhesiveness of Rubber Mixtures and Glues Based on Synthetic Rubbers

PERIODICAL: Tr. N.-i. in-ta rezin. prom-sti, 1956, Nr 3, pp 47 - 55

ABSTRACT: The possibilities of increasing the adhesiveness of mixtures and glues based on butadiene-styrene (BS), butadiene-nitrile (BN) rubbers and glues based on neoprene (N) by means of condensation resins: rubrezina B (I), yarrezina A (II), yarrezina B (III) have been studied. The optimum dosis of these resins for raw mixtures of BS and BN is 10 weight parts per 100 weight parts of rubber. According to the capacity of increasing the adhesiveness of the raw mixtures of BN, I, II, III are equivalent. The introduction of these resins into the rubber mixture does not affect the physical-mechanical properties of the vulcanizates.

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The Increase in the Adhesiveness of Rubber Mixtures and Glues Based on Synthetic Rubbers

I, II and corezin, being introduced into glues of BS and N, increase their confection adhesiveness considerably, as well as the stability of the adhesion of the parts after vulcanization. The properties of the glues of SKB rubber do not improve by the introduction of the resins indicated.

B. Glagolev

Card 2/2

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AUTHORS: Medvedeva, A.M., Deryagin, B.V., Zherebkov, S.K.

TITLE: Studies of Adhesion Phenomena in Rubber to Metal Bonding With "Leykonat" Glue. 3. Interaction Between Sodium Butadiene Rubber and Triphenylmethane Triisocyanate

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol XXII, Nr 2, pp 217-222 (USSR)

ABSTRACT: The authors report on a study of the interaction between rubber and triphenylmethane triisocyanate in solutions and the effect of the isocyanate on rubber as a vulcanizing agent. The study was intended to verify the assumption that the cause of adhesion at the boundary rubber - "Leykonat" film ("Leykonat" is a glue representing a 20% solution of triphenylmethane triisocyanate in dichloroethane) consists in chemical interaction between the rubber and the

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Studies of Adhesion Phenomena in Rubber to Metal Bonding With "Leykonat" Glue 3. Interaction Between Sodium Butadiene Rubber and Triphenylmethane Triisocyanate

isocyanate. Triphenylmethane triisocyanate can simultaneously interact with several rubber molecules, which necessarily must result in the formation of a structure similar to the network obtained by vulcanization. For their investigation the authors used sodium butadiene rubber of the type RShch. For the study of the formation of three-dimensional structures in the solutions a viscometer of the type PV-7 [Ref 3,4] was used, which permits investigation of the properties of highly viscous liquids and concentrated disperse systems. This device makes possible to reveal anomalous structural viscosity of the systems and to determine simultaneously the ultimate deformation stress. The design of the device

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Studies of Adhesion Phenomena in Rubber to Metal Bonding With "Leykonat" Glue 3. Interaction Between Sodium Butadiene Rubber and Triphenylmethane Triisocyanate

and the way to use it for experiments are minutely described by M.P. Volarovich and L.Ya. Ginzburg [Refs 4-6]. The authors' experiments have shown that the reaction of rubber solutions with a solution of isocyanate develops in dependence on the rubber and isocyanate content. The viscosity of 1-2% rubber solutions, to which during storage isocyanate was added, shows only little changes. The viscosity of 3-5% rubber solutions increases by several magnitudes after introduction of the additive. After a certain time three-dimensional structures can be observed in these solutions. The study further revealed that isocyanate-containing rubber films which were heated at 143°C assume the properties of vulcanizates as

Card 3/4

ZHERDKOV, I. V.

ANDRYUSHCHENKO, Nikolay Petrovich; ZHELTYSHEV, Vasiliy Pavlovich; ZHERDKOV, I.V., red.; ABRAMOVA, Ye.A., tekhn.red.

[Wroking with a coping saw] Vypilivanie lobzikom. Rostov-na-Donu. Rostovskoe knizhnoe izd-vo, 1959. 24 p. (MIRA 13:3)
(Handicraft) (Jig saw)

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SOV/69-21-5-10/23

AUTHORS: Deryagin, B.V., Zherebkov, S.K. and Medvedeva, A.M.

TITLE: A Study of Adhesion Phenomena in Rubber to Metal Bonding With Leykonat Cement. 2. Bonding of Metal and Unfilled Rubbers

TITLE: Kolloidnyy zhurnal, 1959, Vol 21, Nr 5, pp 558-563 (USSR)

ABSTRACT: This is a study of the adhesion phenomena observed in the bonding of unfilled rubbers to metals with the aid of the isocyanate cement: Leykonat. Table 1 gives a survey of the rubbers and their ingredients. The rubbers were bonded to metal plates (cleaned with emery paper Nr 100) during the vulcanization process. The bonding strength was characterized by the resistance to the separation of the rubber from the metal, and was expressed in kilograms per centimeter of the width of the specimen (erg/cm^2). The results of preliminary experiments showed that in a number of

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A Study of Adhesion Phenomena in Rubber to Metal Bonding with Leykonat Cement. 2. Bonding of Metal and Unfilled Rubbers

cases the bonding strength exceeds the strength of the rubbers themselves, and the rupture has a cohesional character. In order to obtain in all cases an adhesional character of rubber-metal separation, the authors reduced the thickness of the cement film. The experiments revealed however, that this reduction in thickness affects differently the bonding strength of rubbers prepared on the basis of different natural rubbers. The data given in table 2 and graph 1 shows that with the aid of leykonat cement (on the basis of triisocyanate triphenyl methane) it is possible to bond to metal rubbers prepared on the basis of polar as well as non-polar natural rubbers. In proportion to the growing of the chemical activity and polarity of the natural rubbers, a growth in the intensity of interaction of the cement film can be observed with rubbers prepared on the basis of these natural rubbers, whereas the intensity of interaction of the cement film with the metal remains constant.

A Study of Adhesion Phenomena in Rubber to Metal Bonding with Leykonat Cement. 2. Bonding of Metal and Unfilled Rubbers

The experimental results however, show that in the given case the bonding strength does not grow monotonously in proportion to the increase in chemical activity and polarity of the natural rubbers. After an initial growth it passes through a maximum, and subsequently drops. The authors have shown that the bonding strength of rubber to metal will be high only in the case of an approximate equality of the intensities of interaction at the cement-metal and cement-rubber interfaces. If when one of the surfaces is in contact with the cement film the intensity of interaction is considerably higher, the bonding strength of rubber to metal will be low. The authors already showed in a previous publication [Ref 1] that there is an increase in intensity in the interaction of a cement film with a sandblast-treated metal surface. Bonding of the mentioned rubbers to such surfaces therefore, will bring about a change. The authors

A Study of Adhesion Phenomena in Rubber to Metal Bonding with Leykonat Cement. 2. Bonding of Metal and Unfilled Rubbers

ascertained this phenomenon on the basis of two characteristic examples: bonding of unfilled rubbers prepared from butyl rubber and SKN-40. Whereas the bonding strength of the first rubber did not change, the bonding strength of the second rubber was increased by approximately ten times. On the whole, the experiments have shown that the strength of the rubber to metal bonding, due to the cement film, is controlled by the ratio of intensities of interaction of the latter with the contacting surfaces at the cement-rubber and cement-metal interfaces. In the case of an approximate equality of both intensities, the bonding strength will be low. One of the factors affecting the intensity of interaction of the cement film with the rubber is the reduction in thickness of the cement film. Such a reduction results in a drop in the intensity of interaction of film and rubber, which differently reflects on the strength

Card 4/5

A Study of Adhesion Phenomena in Rubber to Metal Bonding with Leykonat Cement. 2. Bonding of Metal and Unfilled Rubbers

of the rubbers to metal bonding, this strength increasing in some cases and decreasing in others. Use of the isocyanate cement leykonat makes possible a solid bonding to metal of unfilled resins prepared on the basis of most of the existing polar and nonpolar natural rubbers. It was ascertained that an increase of polar groups in natural rubber results in an increase in the intensity of interaction of the film with the rubber containing this natural rubber. There are 2 tables, 2 graphs and 2 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti, Moskva (Scientific Research Institute of the Rubber Industry, Moscow)

SUBMITTED: Oct. 2, 1958

Card 5/5

ZUYEV, Yu.S.; PRAVEDNIKOVA, S.I.; ZHEREBKOVA, L.S.; ZAYTSEVA, V.D.

Rupture life of rubbers in the presence of physically aggressive media. Vysokom.soed. 5 no.8:1201-1206 Ag '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.
(Rubber--Testing)

MARGOLIS, L.D.; YEL'TSOVA, Z.V.; ZHEREBNOY, I.A.

Sodium content in aluminum. TSvet. met. 37 no.6:42-43 Je '64.
(MIRA 17:9)

ZHEREBNOY, N., inzh.

Removing scale incrustations from the cooling system. Avt.transp. 38 no.6:52 Je '60. (MIRA 14:4)
(Automobiles—Maintenance and repair)

1. ZHEREBOV, D.

2. USSR (600)

4. Building

7. Rapid construction in old Russia. Tekh. molod. 20 no. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

ZHERREBOV, D., inzhener.

"Stone construction departments" in Russia. Stroitel' no.5:29 My '57.
(Construction industry--History) (MIRA 10:6)

ZHEREBOV, D.

High-speed building methods in old Russia. Stroitel' no.12: 26 D '56. (MLRA 10:2)

(City planning)

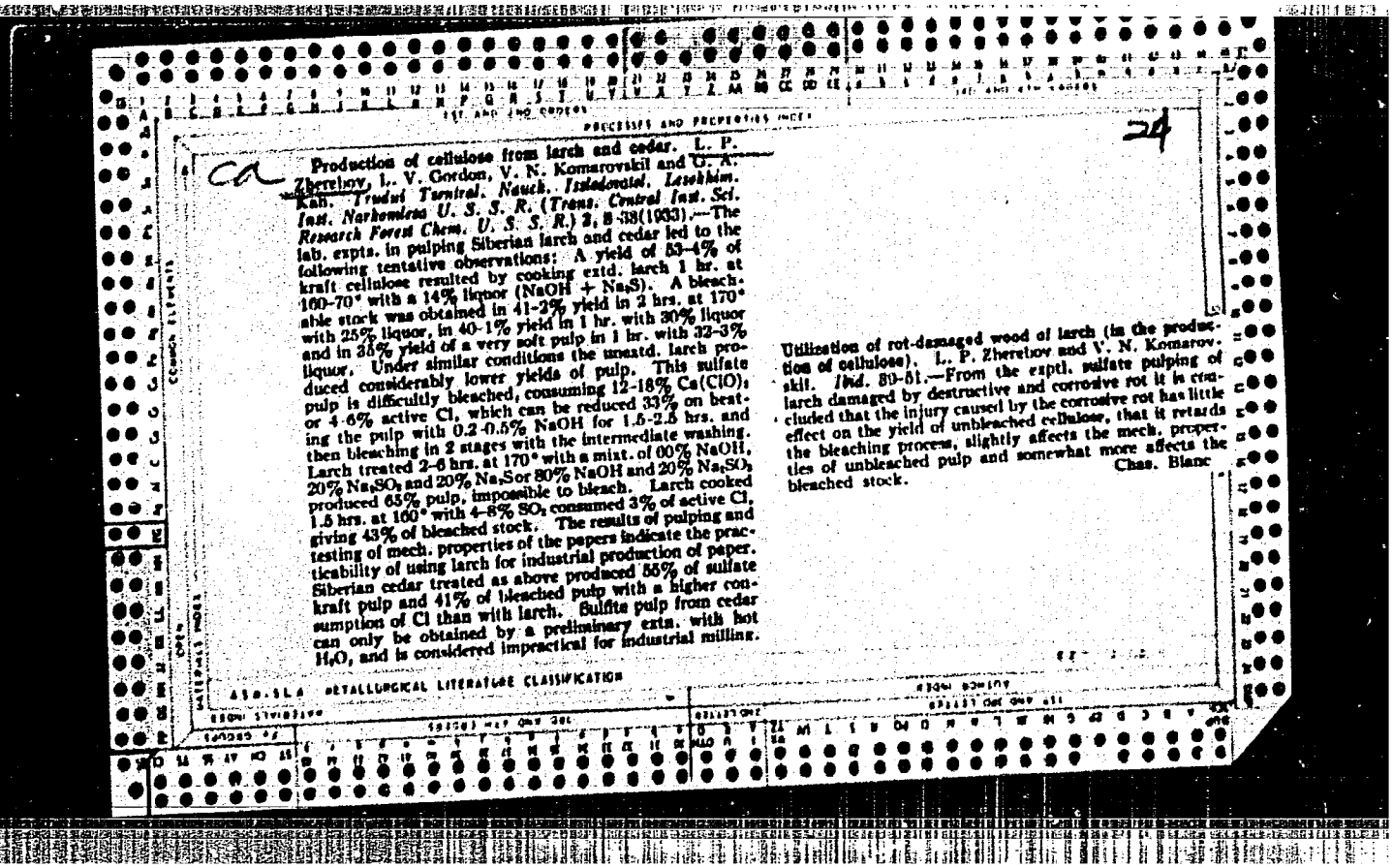
ZHEREBOV, D. K.

Cand Tech Sci - (diss) "History of the development of domestic single-shovel building excavators." Moscow, 1961. 19 pp; (Academy of Construction and Architecture USSR, Scientific Research Inst of the Theory and History of Architecture and Building Techniques); 250 copies; price not given; (KL, 10-61 sup, 214)

ZHEREBOV, D.K., inzh.

Development of the functional equipment of excavators to the middle of the 19th century. Stori. i dor. mash. 6 no.5:24-27 My '61. (MIRA 14:6)

(Excavating machinery)



PROCESSES AND PROPERTIES INDEX

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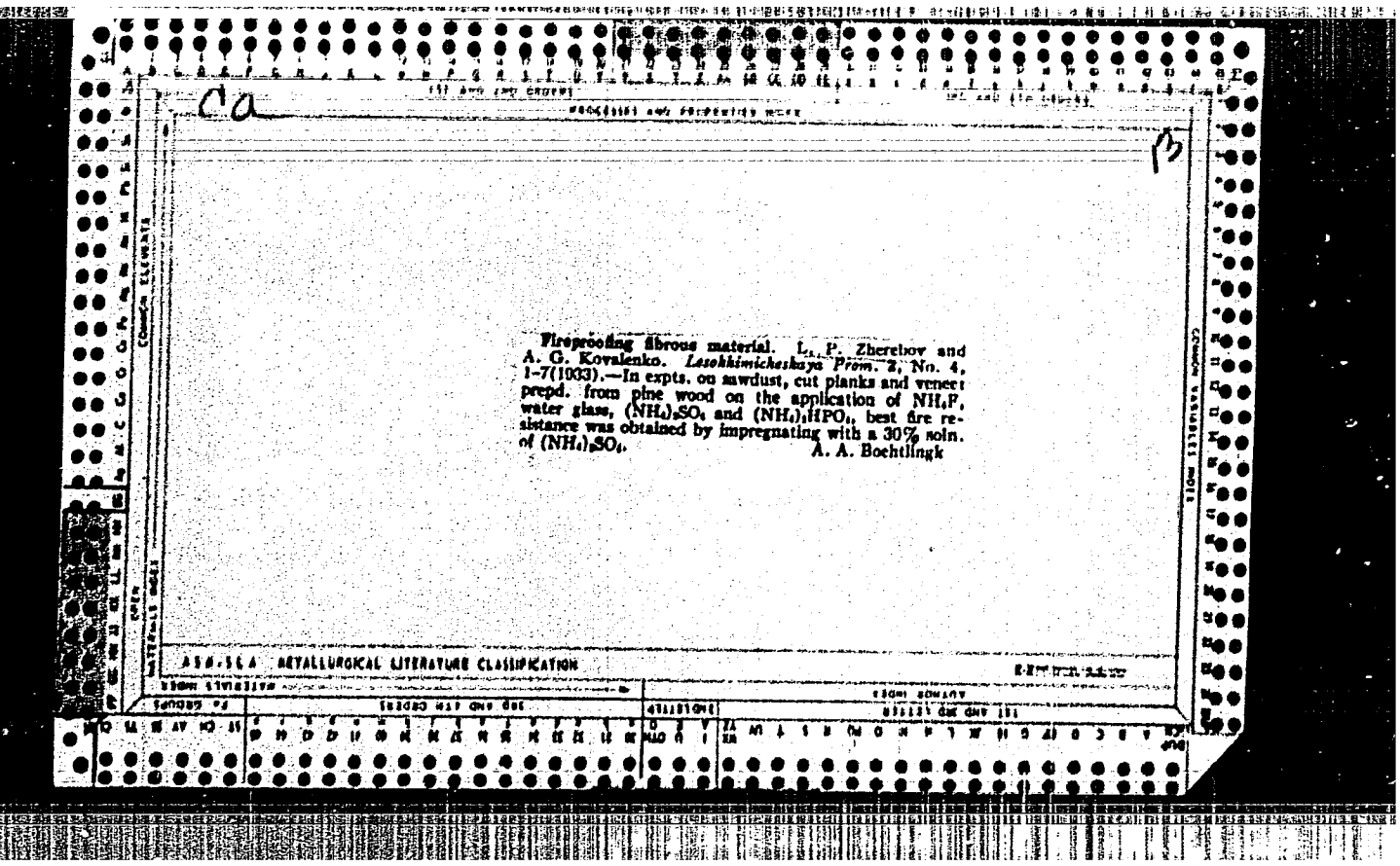
CA

Production of cellulose from larch and cedar. L. P. Zherelov, L. V. Gordon, V. N. Komarovskii and U. A. Kah. *Trudui Tsentral. Nauch. Issledovatel. Lesokhim. Inst. Narkomles U. S. S. R.* (*Trans. Central Inst. Sci. Research Forest Chem. U. S. S. R.*) 2, 5-38(1933).—The lab. expts. in pulping Siberian larch and cedar led to the following tentative observations: A yield of 53-4% of kraft cellulose resulted by cooking extd. larch 1 hr. at 160-70° with a 14% liquor ($NaOH + Na_2S$). A bleachable stock was obtained in 41-2% yield in 2 hrs. at 170° with 25% liquor, in 40-1% yield in 1 hr. with 30% liquor and in 38% yield of a very soft pulp in 1 hr. with 32-3% liquor. Under similar conditions the unextd. larch produced considerably lower yields of pulp. This sulfate pulp is difficultly bleached, consuming 12-18% $Ca(ClO)_2$ or 4-6% active Cl, which can be reduced 33% on beating the pulp with 0.2-0.5% NaOH for 1.5-2.5 hrs. and then bleaching in 2 stages with the intermediate washing. Larch treated 2-6 hrs. at 170° with a mixt. of 60% NaOH, 20% Na_2SO_3 and 20% Na_2S or 80% NaOH and 20% Na_2SO_3 produced 65% pulp, impossible to bleach. Larch cooked 1.5 hrs. at 160° with 4-8% SO_2 consumed 3% of active Cl, giving 43% of bleached stock. The results of pulping and testing of mech. properties of the papers indicate the practicability of using larch for industrial production of paper. Siberian cedar treated as above produced 55% of sulfate kraft pulp and 41% of bleached pulp with a higher consumption of Cl than with larch. Sulfite pulp from cedar can only be obtained by a preliminary extn. with hot H_2O, and is considered impractical for industrial milling.

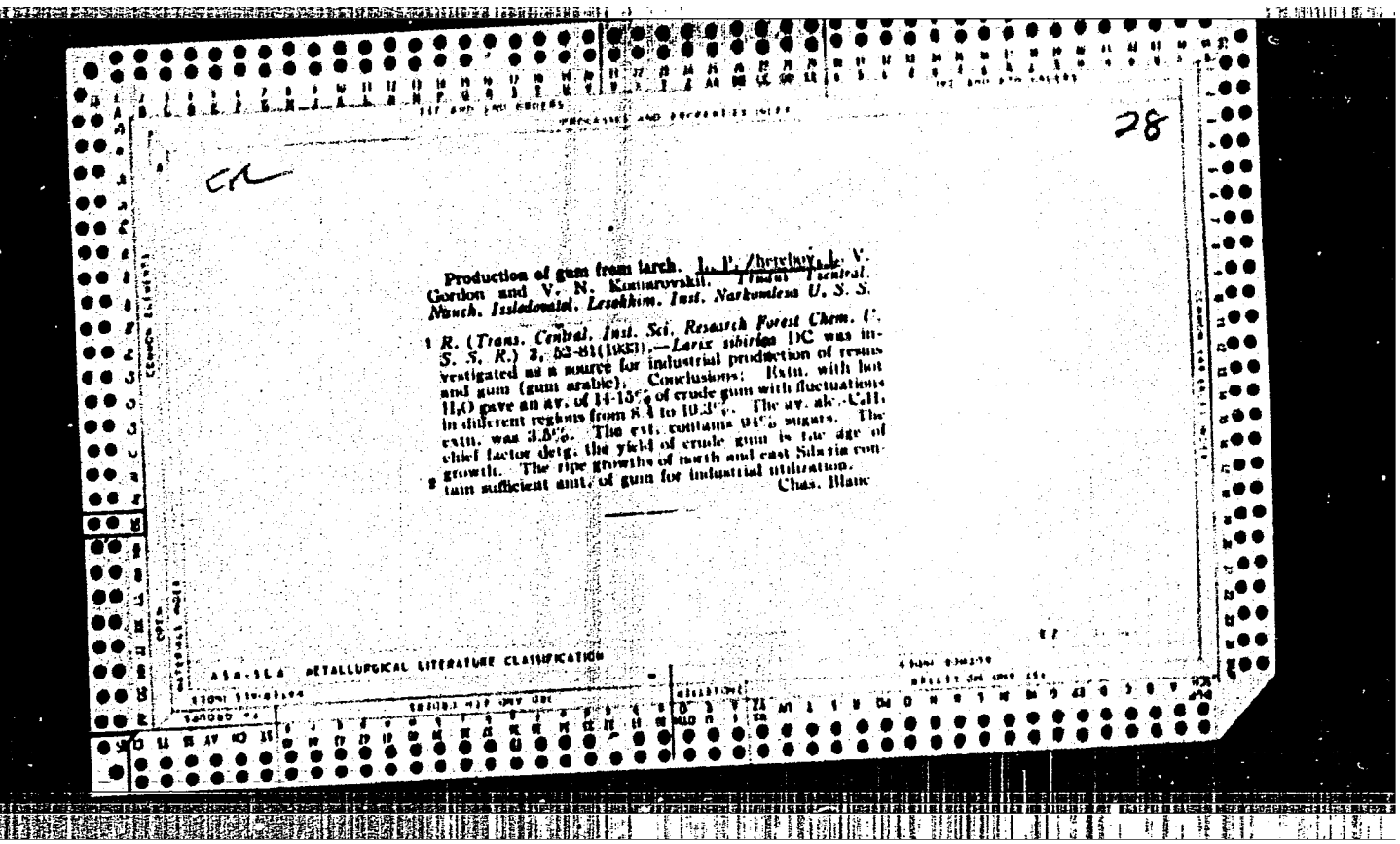
Utilization of rot-damaged wood of larch (in the production of cellulose). L. P. Zherelov and V. N. Komarovskii. *Ibid.* 39-51.—From the exptl. sulfate pulping of larch damaged by destructive and corrosive rot it is concluded that the injury caused by the corrosive rot has little effect on the yield of unbleached cellulose, that it retards the bleaching process, slightly affects the mech. properties of unbleached pulp and somewhat more affects the bleached stock.

Chas. Blanc

A10-5L4 METALLURGICAL LITERATURE CLASSIFICATION



Fireproofing fibrous material. L. P. Zherelov and A. G. Kovalenko. *Lesokhimicheskaya Prom.* 2, No. 4, 1-7(1933).—In expts. on sawdust, cut planks and veneer prepd. from pine wood on the application of NH_4F, water glass, $(NH_4)_2SO_4$ and $(NH_4)_2HPO_4$, best fire resistance was obtained by impregnating with a 30% soln. of $(NH_4)_2SO_4$.
A. A. Boehtlingk

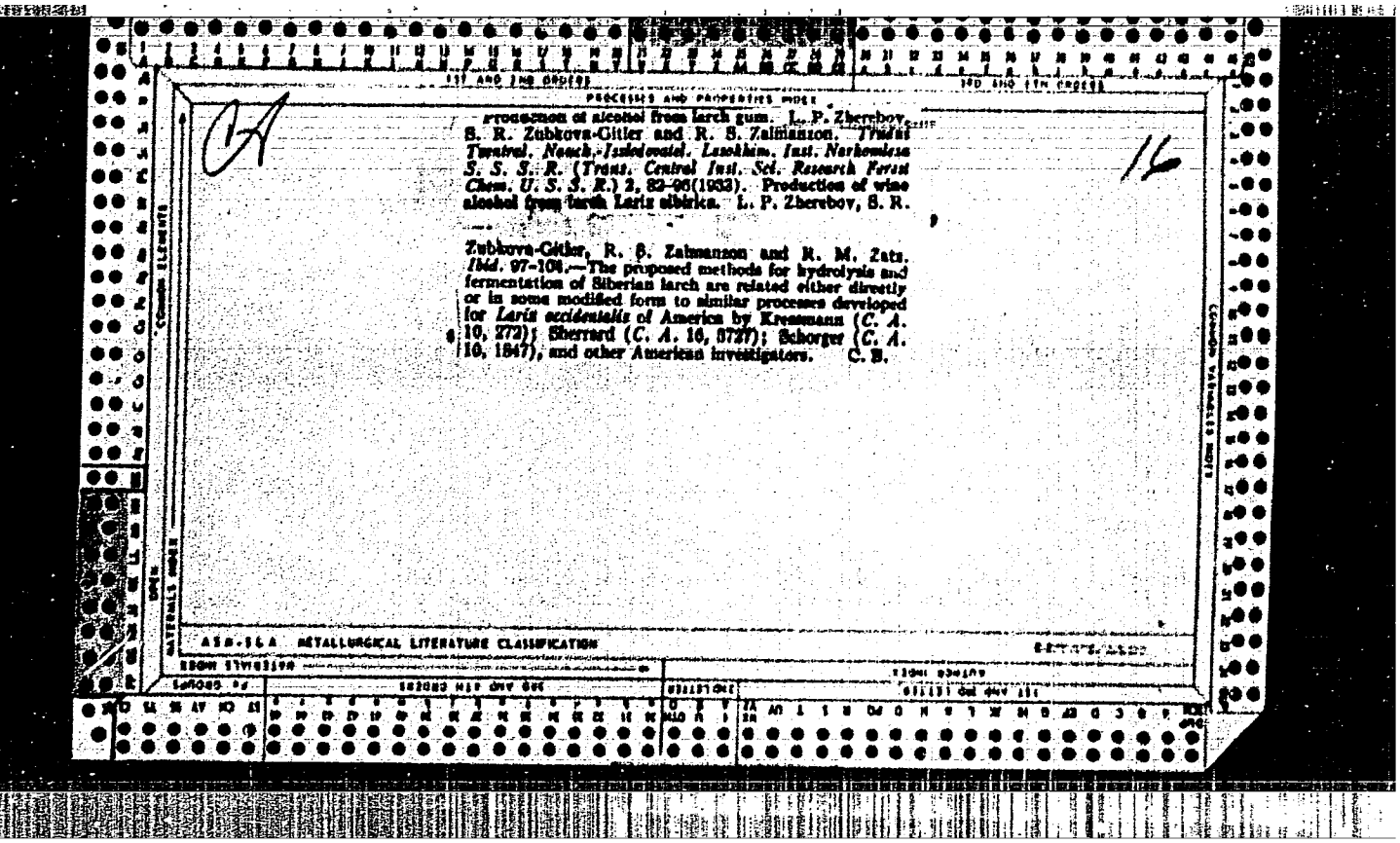


28

Production of gum from larch. [illegible] V. Gordon and V. N. Kuznetsovskii. *Trudy Tsentral. Nauch. Issledovatel. Lesokhim. Inst. Narkomlesa U. S. S. R.* (Trans. *Central. Inst. Sci. Research Forest Chem. U. S. S. R.*) 2, 53-81(1933).—*Larix sibirica* DC was investigated as a source for industrial production of resins and gum (gum arabic). Conclusions: Extn. with hot H_2O gave an av. of 14-15% of crude gum with fluctuations in different regions from 8.4 to 19.3%. The av. alc.-Et$_2$O extn. was 3.5%. The ext. contains 94% sugars. The chief factor detg. the yield of crude gum is the age of growth. The ripe growths of north and east Siberia contain sufficient amt. of gum for industrial utilization.

Chas. Blanc

A58-5LA METALLURGICAL LITERATURE CLASSIFICATION



CA

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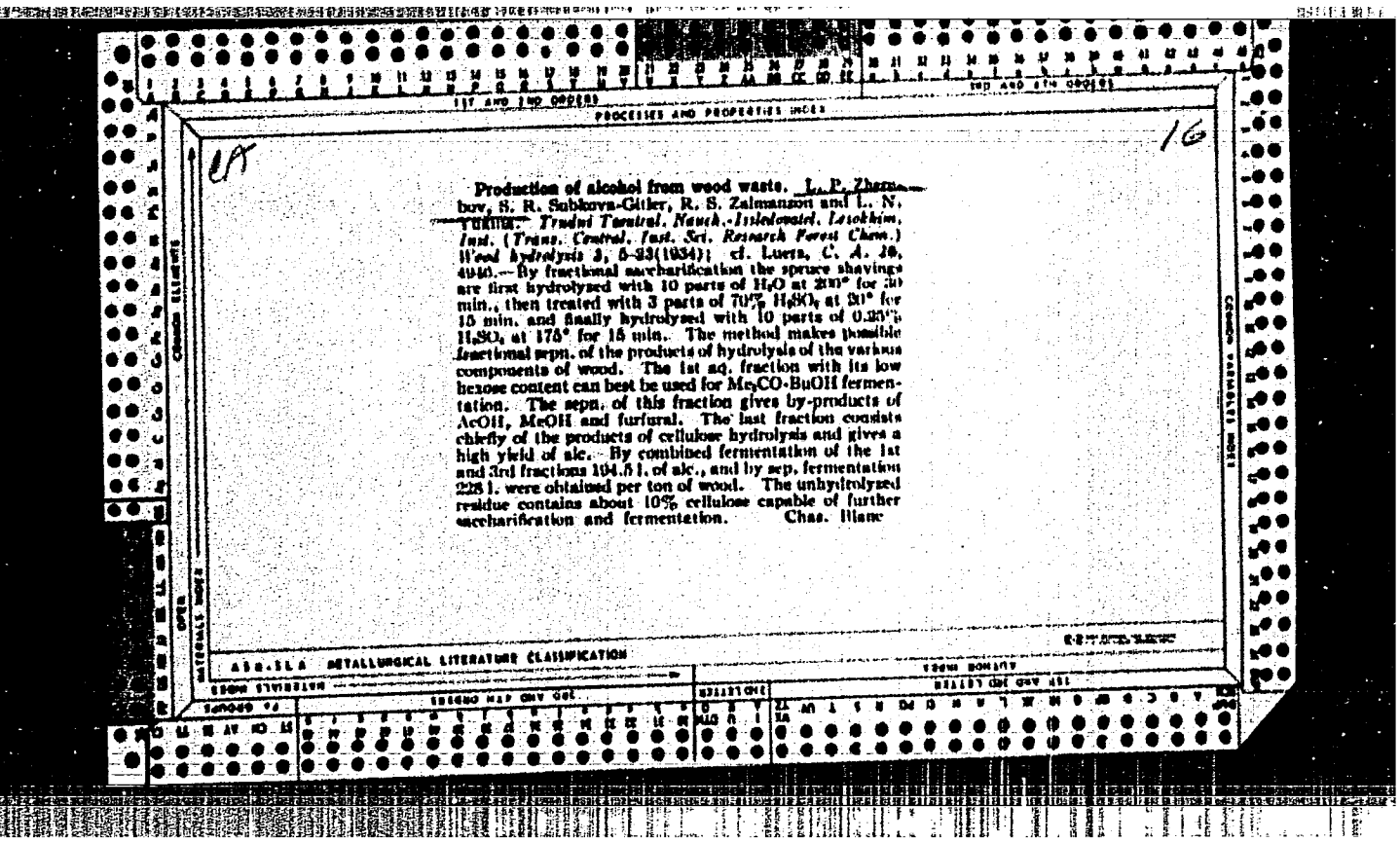
PROCESSES AND PROPERTIES INDEX

Processes of alcohol from larch gum. L. P. Zherebov, S. R. Zubkova-Gitler and R. S. Zalmanzon. *Trudui Tsentral. Nauch.-Issledovatel. Lesokhim. Inst. Narkomlesa S. S. S. R.* (*Trans. Central Inst. Sci. Research Forest Chem. U. S. S. R.*) 2, 83-96(1933). Production of wine alcohol from larch *Larix sibirica*. L. P. Zherebov, S. R. Zubkova-Gitler, R. S. Zalmanzon and R. M. Zats. *Ibid.* 97-101.—The proposed methods for hydrolysis and fermentation of Siberian larch are related either directly or in some modified form to similar processes developed for *Larix occidentalis* of America by Kressmann (*C. A.* 10, 272); Sherrard (*C. A.* 16, 3727); Schorger (*C. A.* 16, 1847), and other American investigators. C. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

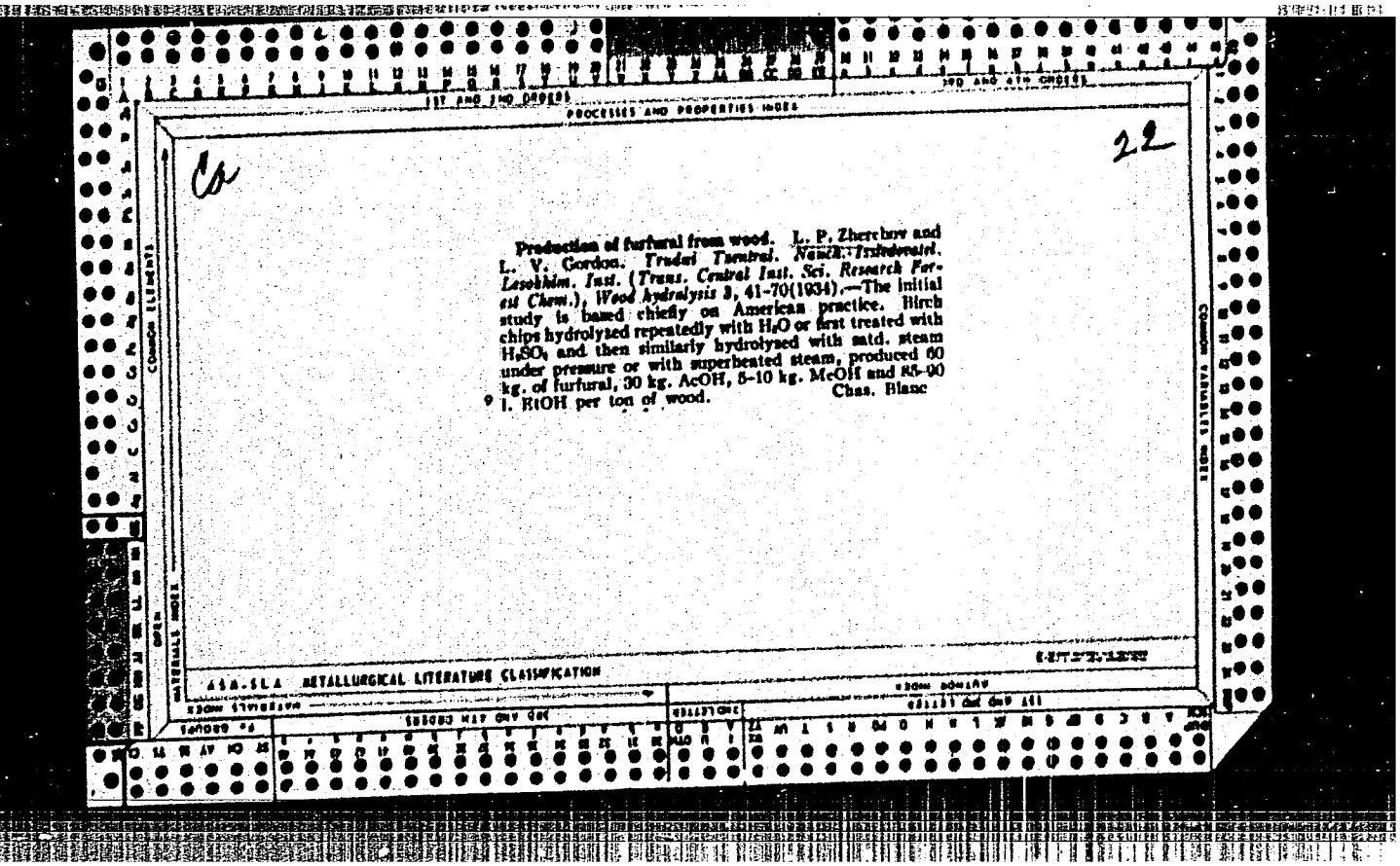


PROCESSES AND PROPERTIES INDEX

16

Production of alcohol from wood waste. L. P. Zharkov, S. R. Subkova-Gitter, R. S. Zalmanzon and L. N. Yurina. *Trudui Tsentral. Nauch.-Issledovatel. Lesokhim. Inst. (Trans. Central. Inst. Sci. Research Forest Chem.) Wood hydrolysis* 3, 5-23(1934); cf. Luers, *C. A.* 30, 4945.—By fractional saccharification the spruce shavings are first hydrolyzed with 10 parts of H_2O at 200° for 30 min., then treated with 3 parts of 70% H_2SO_4 at 20° for 15 min. and finally hydrolyzed with 10 parts of 0.35% H_2SO_4 at 175° for 15 min. The method makes possible fractional sepn. of the products of hydrolysis of the various components of wood. The 1st aq. fraction with its low hexose content can best be used for Me_2CO-BuOH fermentation. The sepn. of this fraction gives by-products of AcOH, MeOH and furfural. The last fraction consists chiefly of the products of cellulose hydrolysis and gives a high yield of alc. By combined fermentation of the 1st and 3rd fractions 194.5 l. of alc., and by sep. fermentation 228 l. were obtained per ton of wood. The unhydrolyzed residue contains about 10% cellulose capable of further saccharification and fermentation. Chas. Blanc

A 38.5 L A METALLURGICAL LITERATURE CLASSIFICATION

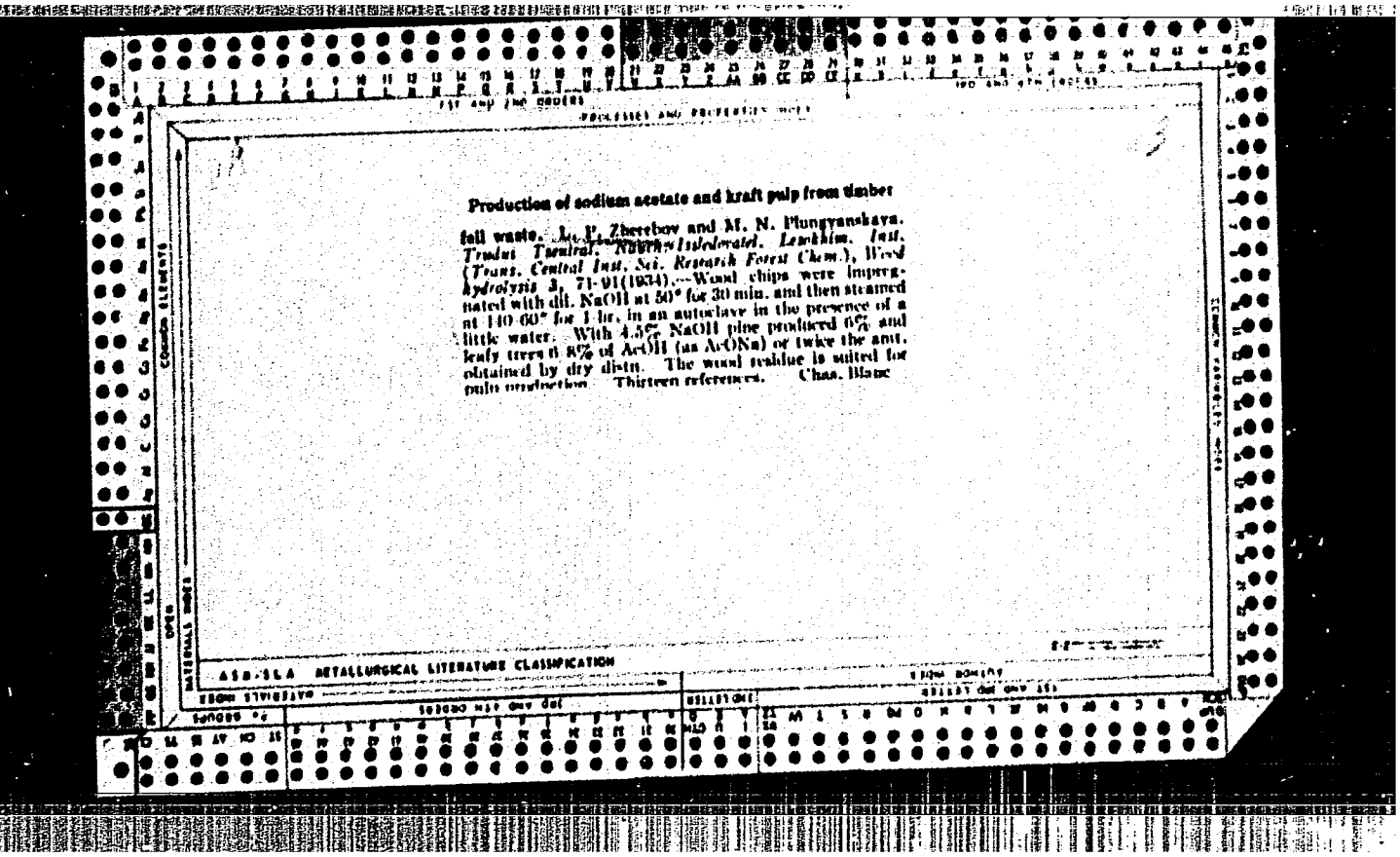


Ca

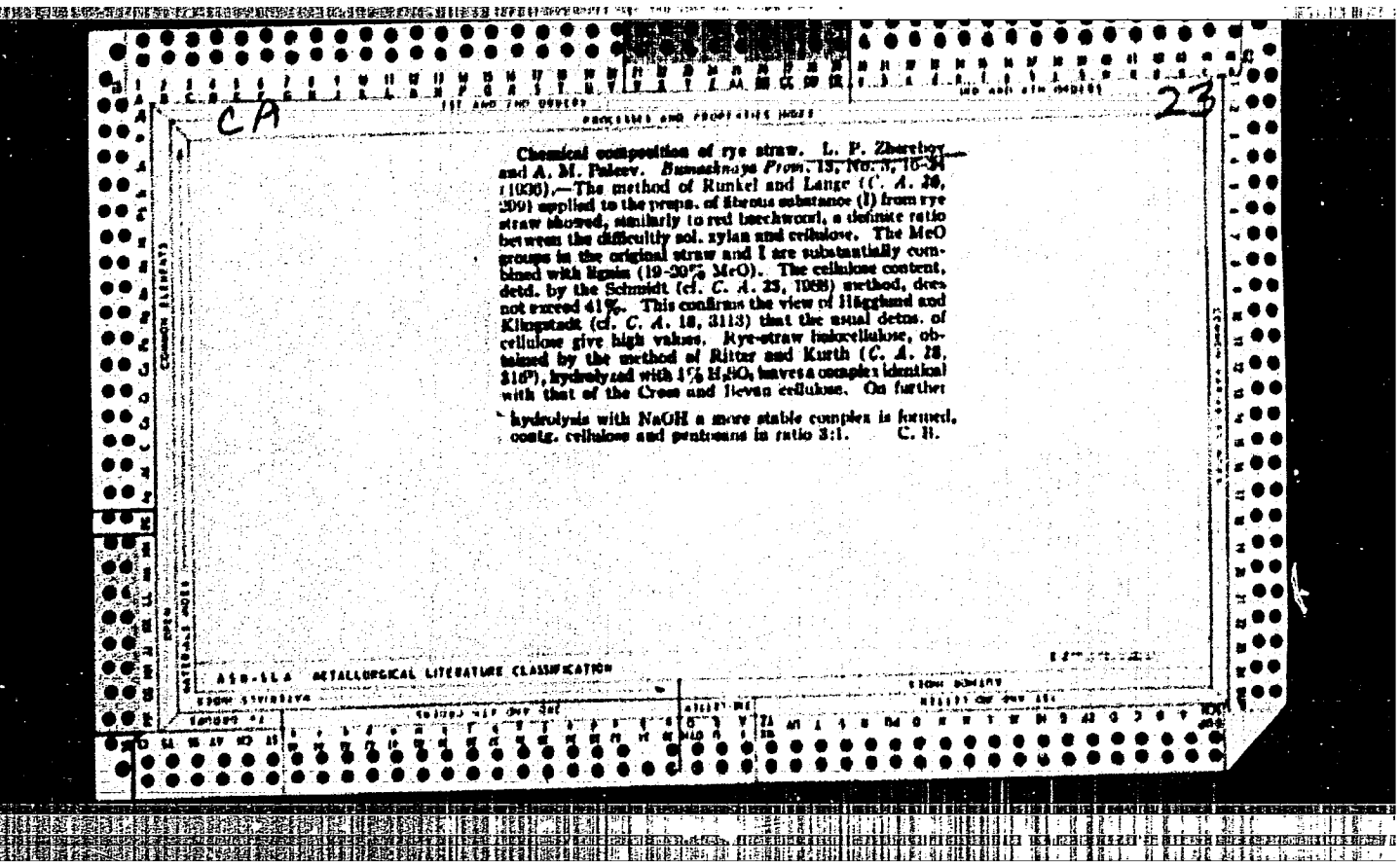
22

Production of furfural from wood. L. P. Zherebov and L. V. Gordon. *Trudui Tsentral. Nauch.-Issledovatel. Lesokhim. Inst.* (*Trans. Central Inst. Sci. Research Forest Chem.*), *Wood Hydrolysis* 3, 41-70(1934).—The initial study is based chiefly on American practice. Birch chips hydrolyzed repeatedly with H_2O or first treated with H_2SO_4 and then similarly hydrolyzed with satd. steam under pressure or with superheated steam, produced 60 kg. of furfural, 30 kg. AcOH, 5-10 kg. MeOH and 85-90 l. EtOH per ton of wood. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Production of sodium acetate and kraft pulp from timber fall waste. Ju. P. Zherebov and M. N. Plungyanskaya. *Trudui Tsentral. Nauchno-Issledovatel. Lesokhim. Inst. (Trans. Central Inst. Sci. Research Forest Chem.), Wood Hydrolysis* 3, 71-91(1934).—Wood chips were impregnated with dil. NaOH at 50° for 30 min. and then steamed at 140-60° for 1 hr. in an autoclave in the presence of a little water. With 4.5% NaOH pine produced 6% and leafy trees 8% of AcOH (as AcONa) or twice the amt. obtained by dry distn. The wood residue is suited for pulp production. Thirteen references. Chas. Blanc



CA

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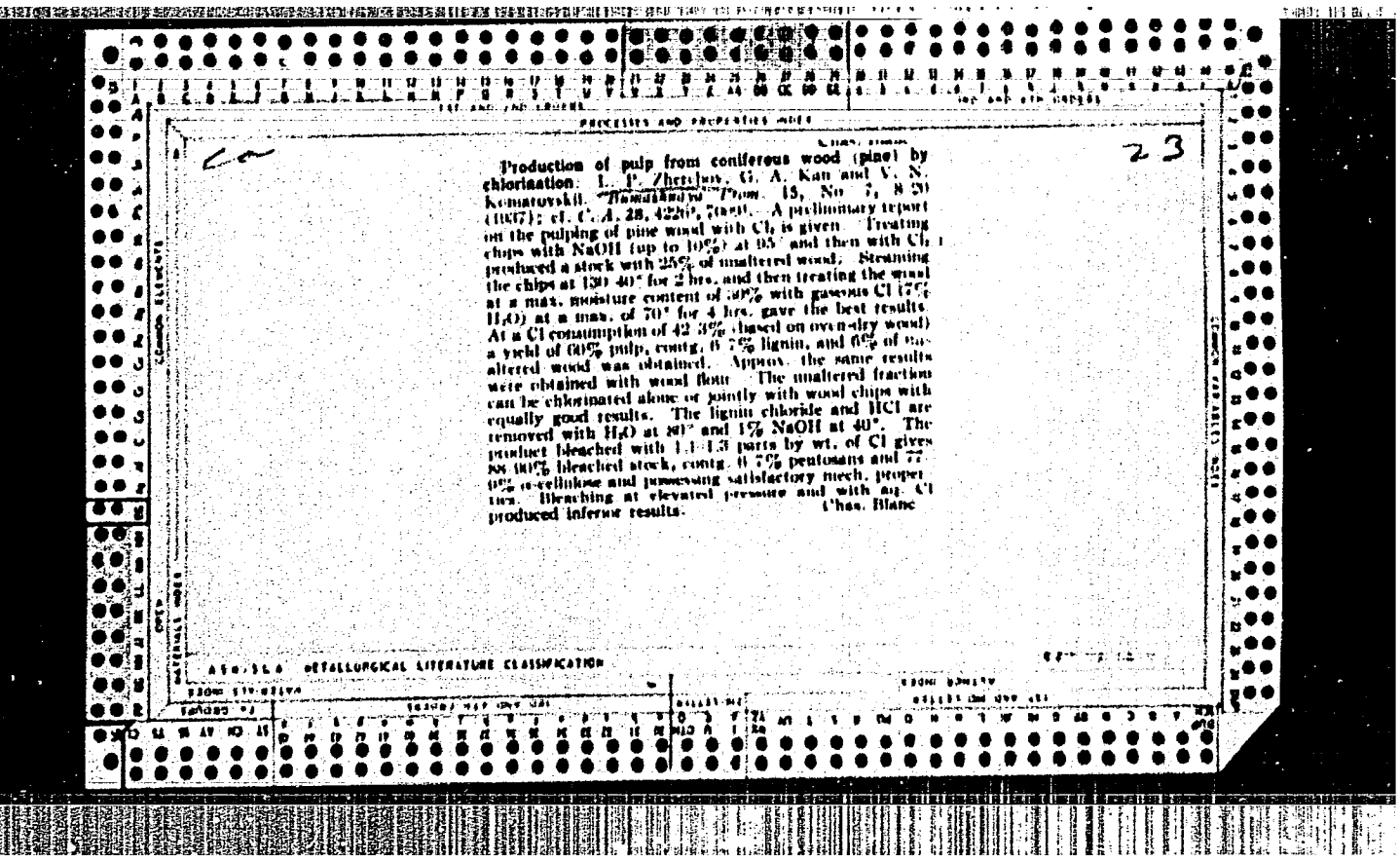
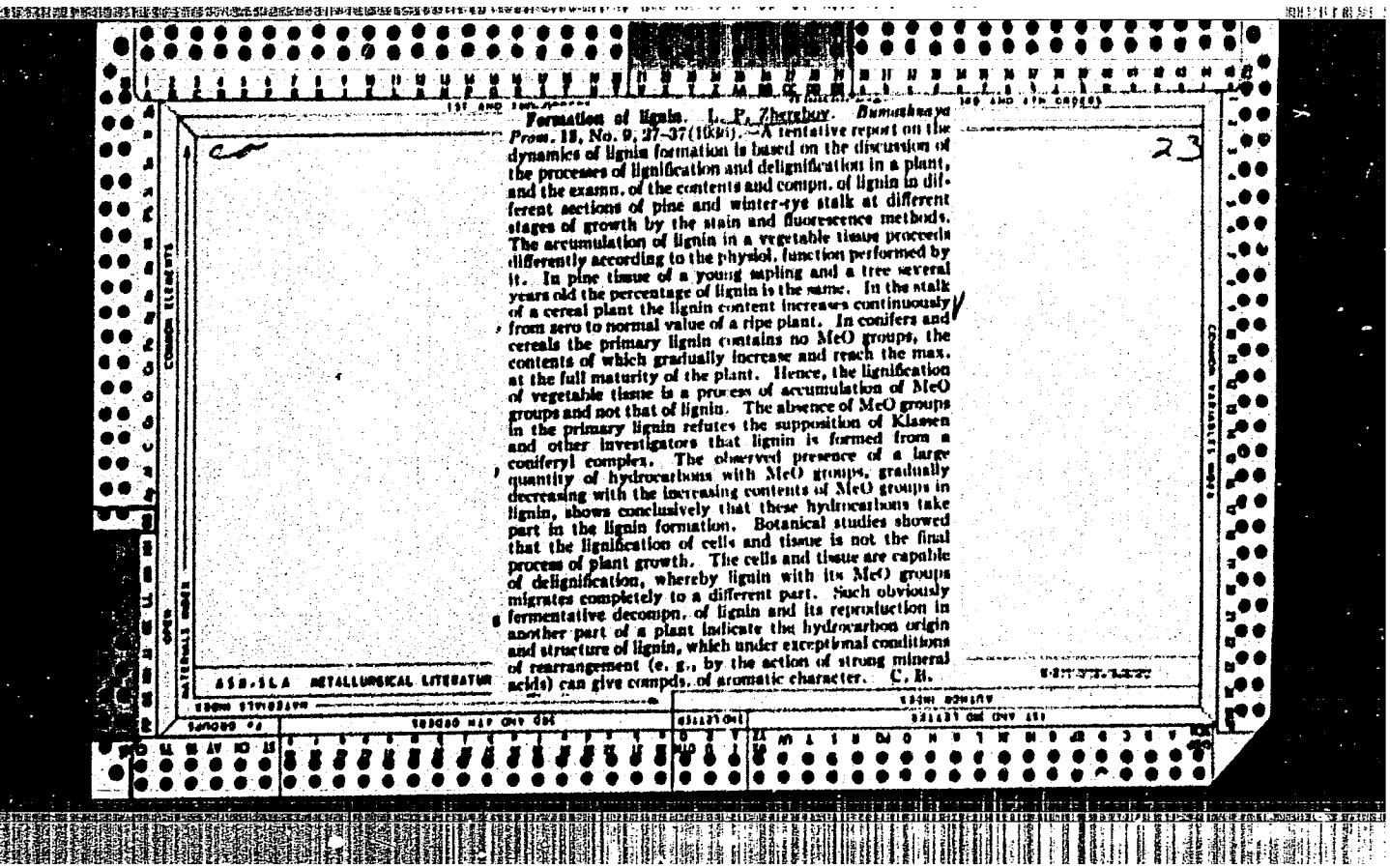
Chemical composition of rye straw. L. P. Zhurbiev and A. M. Paleev. *Sumashnaya Prom.* 15, No. 1, 16-24 (1936).—The method of Runkel and Lange (*C. A.* 26, 2091) applied to the prepn. of fibrous substance (I) from rye straw showed, similarly to red beechwood, a definite ratio between the difficultly sol. xylan and cellulose. The MeO groups in the original straw and I are substantially combined with lignin (19-20% MeO). The cellulose content, detd. by the Schmidt (cf. *C. A.* 23, 1068) method, does not exceed 41%. This confirms the view of Hägglund and Klingstadt (cf. *C. A.* 18, 3113) that the usual detns. of cellulose give high values. Rye-straw holocellulose, obtained by the method of Ritter and Kurth (*C. A.* 28, 316⁹), hydrolyzed with 1% H_2SO_4 leaves a complex identical with that of the Cross and Bevan cellulose. On further hydrolysis with NaOH a more stable complex is formed, consig. cellulose and pentosans in ratio 3:1. C. H.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

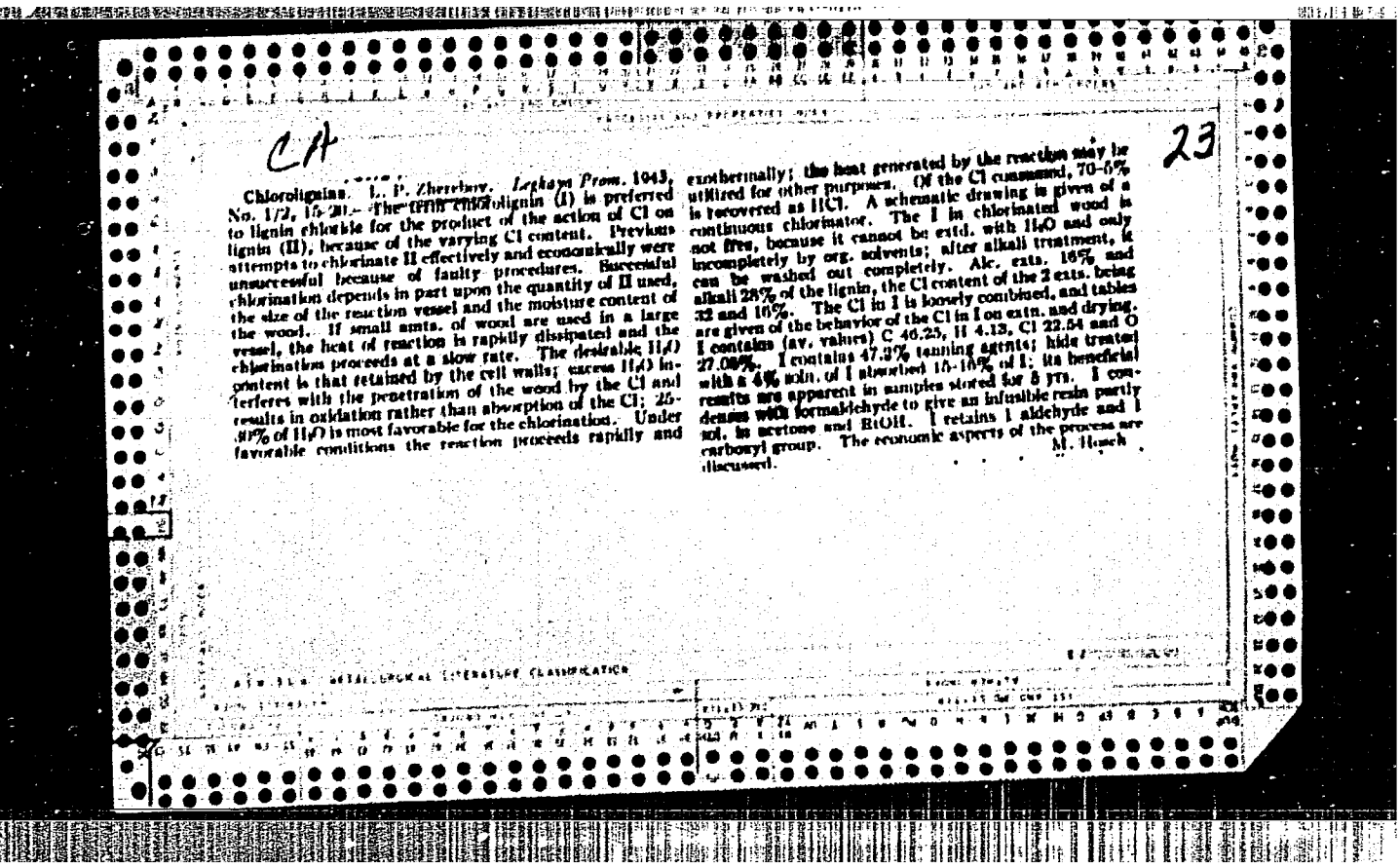


Production of pulp from coniferous wood (pine) by chlorination. I. P. Zherebov, G. A. Kan and V. N. Komarovskii. *Bumazhnaya Prom.* 15, No. 7, 8-20 (1937); cf. *C. A.* 28, 4226⁹, 7(1)⁹. A preliminary report on the pulping of pine wood with Cl_2 is given. Treating chips with NaOH (up to 10%) at 95° and then with Cl_2 produced a stock with 25% of unaltered wood. Steaming the chips at 120-40° for 2 hrs. and then treating the wood at a max. moisture content of 30% with gaseous Cl (7% H_2O) at a max. of 70° for 4 hrs. gave the best results. At a Cl consumption of 42.3% (based on oven-dry wood) a yield of 60% pulp, contg. 0.7% lignin, and 6% of unaltered wood was obtained. Approx. the same results were obtained with wood flour. The unaltered fraction can be chlorinated alone or jointly with wood chips with equally good results. The lignin chloride and HCl are removed with H_2O at 80° and 1% NaOH at 40°. The product bleached with 1.1-1.3 parts by wt. of Cl gives an 80% bleached stock, contg. 0.7% pentosans and 77-9% α-cellulose and possessing satisfactory mech. properties. Bleaching at elevated pressure and with aq. Cl produced inferior results.

Chas. Blanc



Formation of lignin. L. P. Zherebov. *Bumazhnaya Prom.* 18, No. 9, 27–37 (1943).—A tentative report on the dynamics of lignin formation is based on the discussion of the processes of lignification and delignification in a plant, and the examn. of the contents and compn. of lignin in different sections of pine and winter-rye stalk at different stages of growth by the stain and fluorescence methods. The accumulation of lignin in a vegetable tissue proceeds differently according to the physiol. function performed by it. In pine tissue of a young sapling and a tree several years old the percentage of lignin is the same. In the stalk of a cereal plant the lignin content increases continuously from zero to normal value of a ripe plant. In conifers and cereals the primary lignin contains no MeO groups, the contents of which gradually increase and reach the max. at the full maturity of the plant. Hence, the lignification of vegetable tissue is a process of accumulation of MeO groups and not that of lignin. The absence of MeO groups in the primary lignin refutes the supposition of Klasson and other investigators that lignin is formed from a coniferyl complex. The observed presence of a large quantity of hydrocarbons with MeO groups, gradually decreasing with the increasing contents of MeO groups in lignin, shows conclusively that these hydrocarbons take part in the lignin formation. Botanical studies showed that the lignification of cells and tissue is not the final process of plant growth. The cells and tissue are capable of delignification, whereby lignin with its MeO groups migrates completely to a different part. Such obviously fermentative decompn. of lignin and its reproduction in another part of a plant indicate the hydrocarbon origin and structure of lignin, which under exceptional conditions of rearrangement (e. g., by the action of strong mineral acids) can give compds. of aromatic character. C. B.



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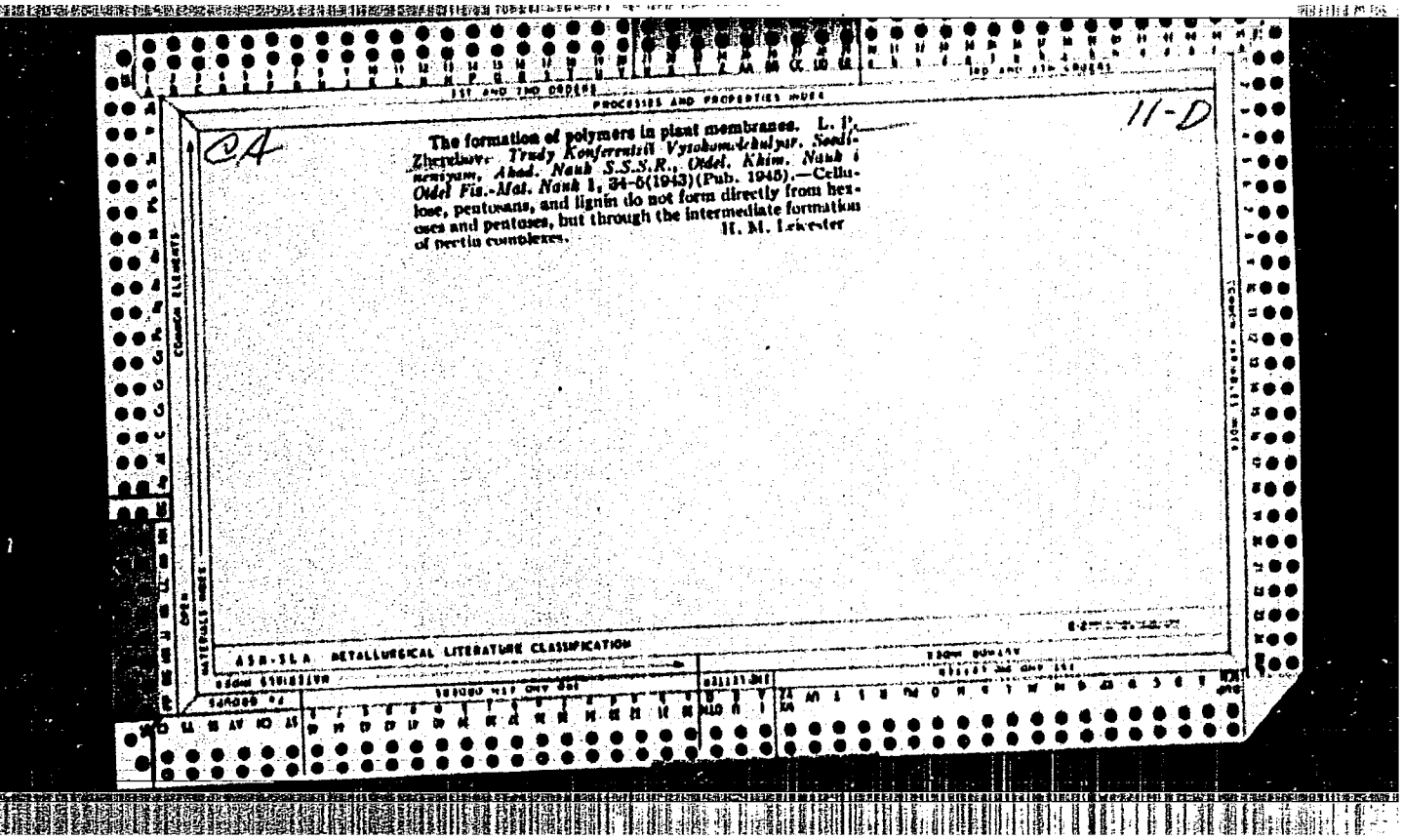
Chlorolignins. L. P. Zherebov. *Leshoz. Prom.* 1943, No. 1/2, 15-20.—The term chlorolignin (I) is preferred to lignin chloride for the product of the action of Cl on lignin (II), because of the varying Cl content. Previous attempts to chlorinate II effectively and economically were unsuccessful because of faulty procedures. Successful chlorination depends in part upon the quantity of II used, the size of the reaction vessel and the moisture content of the wood. If small amts. of wood are used in a large vessel, the heat of reaction is rapidly dissipated and the chlorination proceeds at a slow rate. The desirable H_2O content is that retained by the cell walls; excess H_2O interferes with the penetration of the wood by the Cl and results in oxidation rather than absorption of the Cl; 25-30% of H_2O is most favorable for the chlorination. Under favorable conditions the reaction proceeds rapidly and exothermally; the heat generated by the reaction may be utilized for other purposes. Of the Cl consumed, 70-6% is recovered as HCl. A schematic drawing is given of a continuous chlorinator. The I in chlorinated wood is not free, because it cannot be extd. with H_2O and only incompletely by org. solvents; after alkali treatment, it can be washed out completely. Alc. exts. 16% and alkali 28% of the lignin, the Cl content of the 2 exts. being 32 and 16%. The Cl in I is loosely combined, and tables are given of the behavior of the Cl in I on extn. and drying. I contains (av. values) C 46.25, H 4.13, Cl 22.54 and O 27.08%. I contains 47.9% tanning agents; hide treated with a 4% soln. of I absorbed 15-16% of I; its beneficial results are apparent in samples stored for 8 yrs. I condenses with formaldehyde to give an infusible resin partly sol. in acetone and EtOH. I retains 1 aldehyde and 1 carbonyl group. The economic aspects of the process are discussed.

M. Hasch



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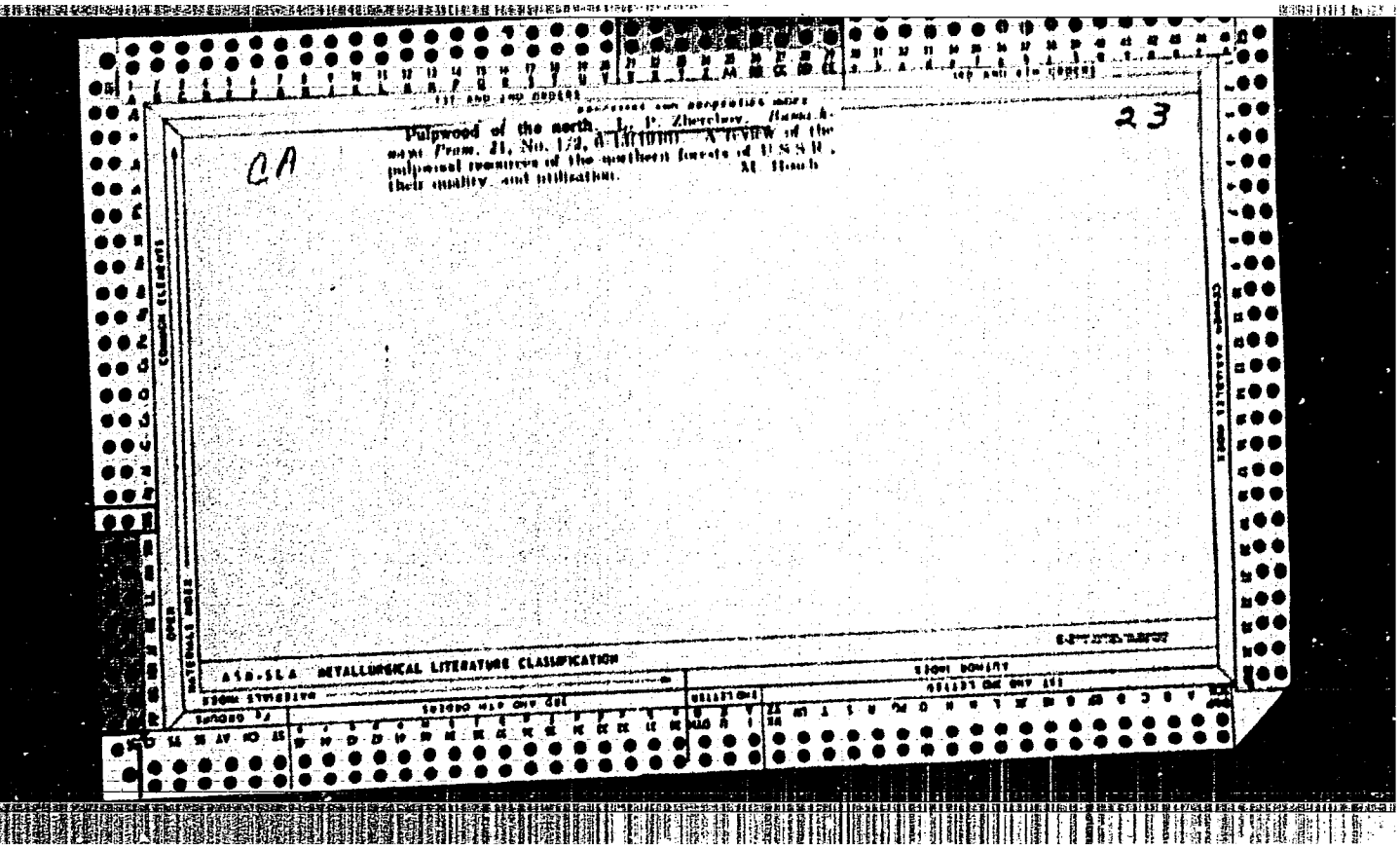
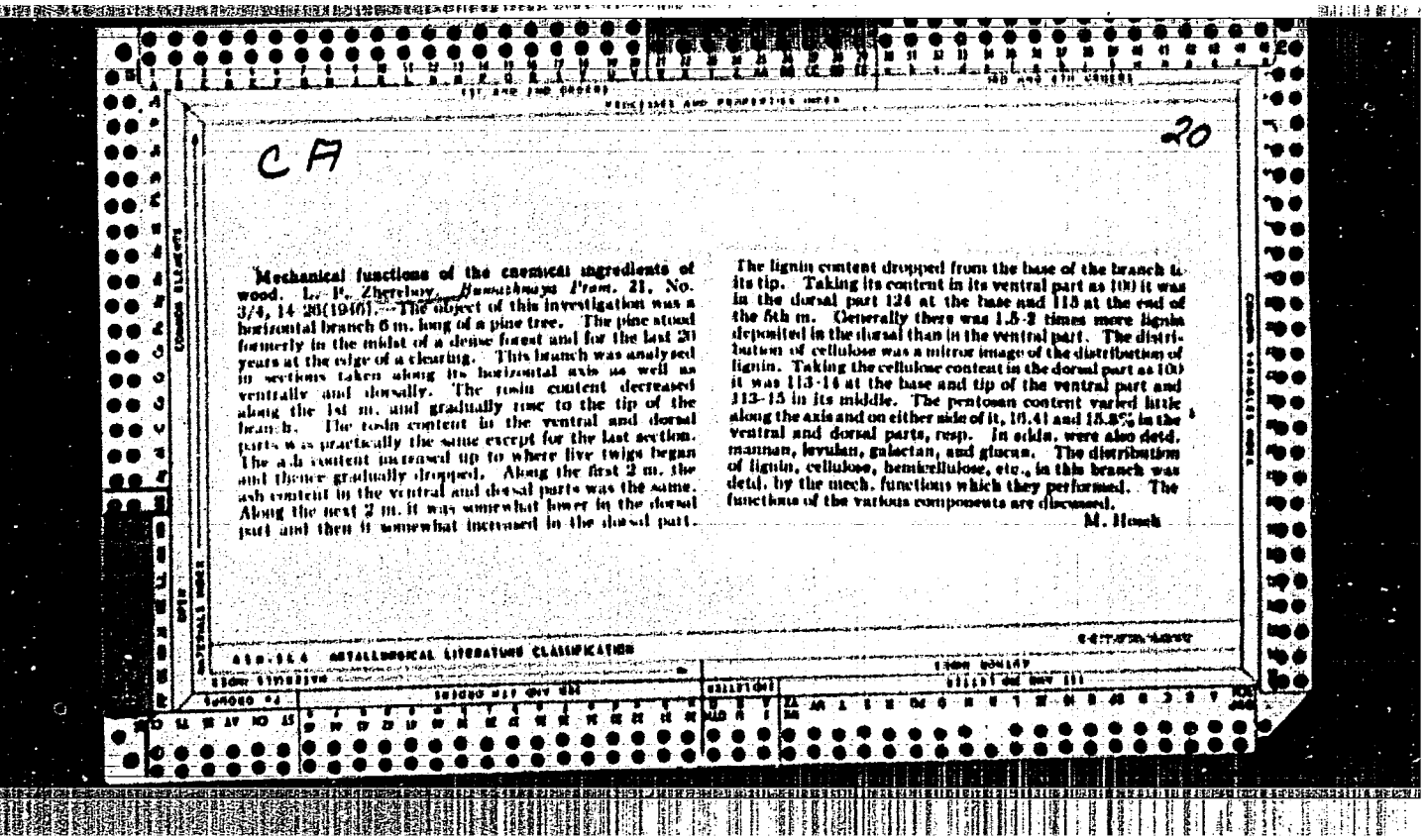
11-D

The formation of polymers in plant membranes. L. P. Zherebtsov. *Trudy Konferentsii Vysokomolekuljar. Soedinenivam, Akad. Nauk S.S.S.R., Otdel. Khim. Nauk i Otdel Fiz.-Mat. Nauk* 1, 34-6(1943)(Pub. 1945).—Cellulose, pentosans, and lignin do not form directly from hexoses and pentoses, but through the intermediate formation of pectin complexes.

H. M. Leicester





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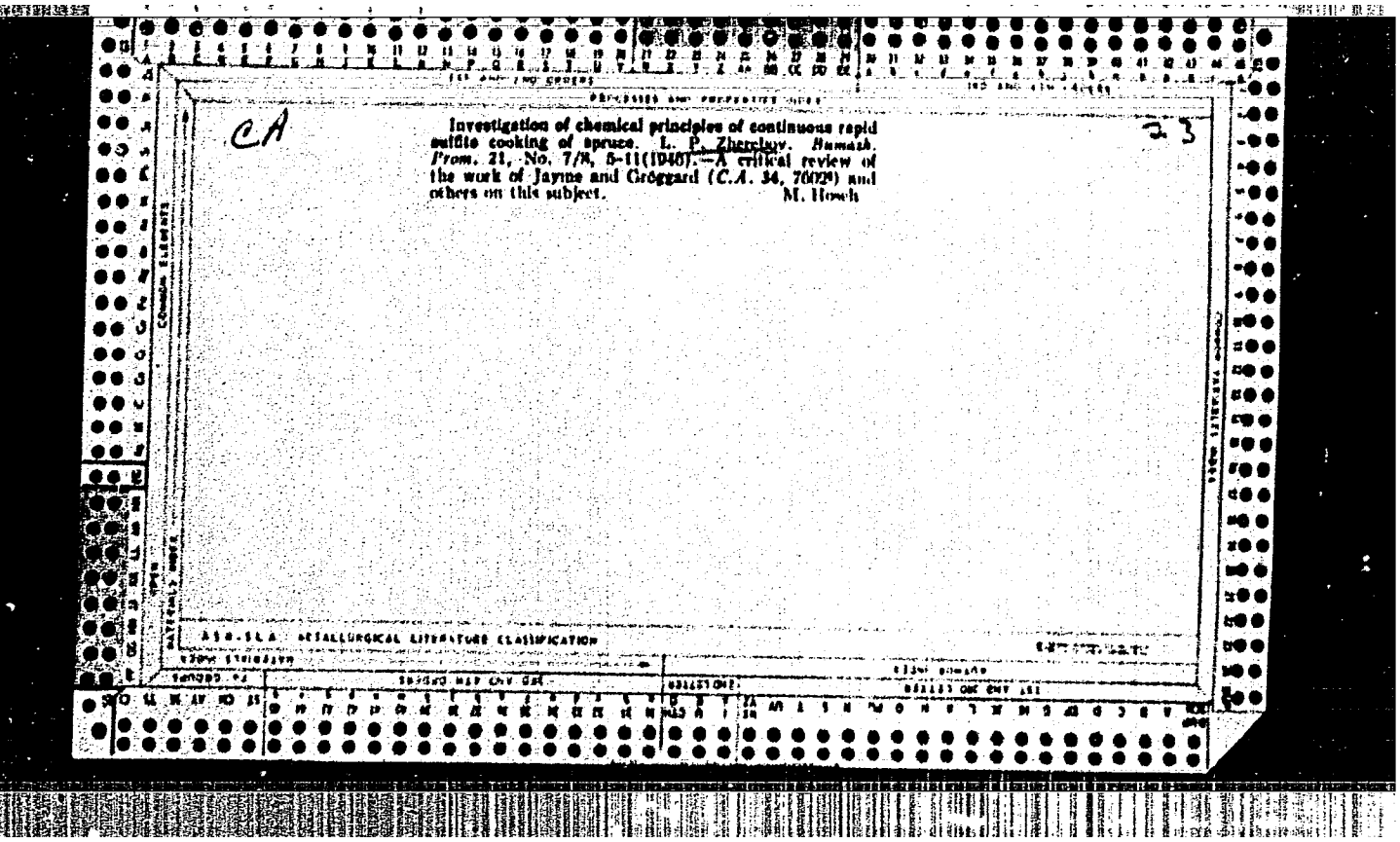
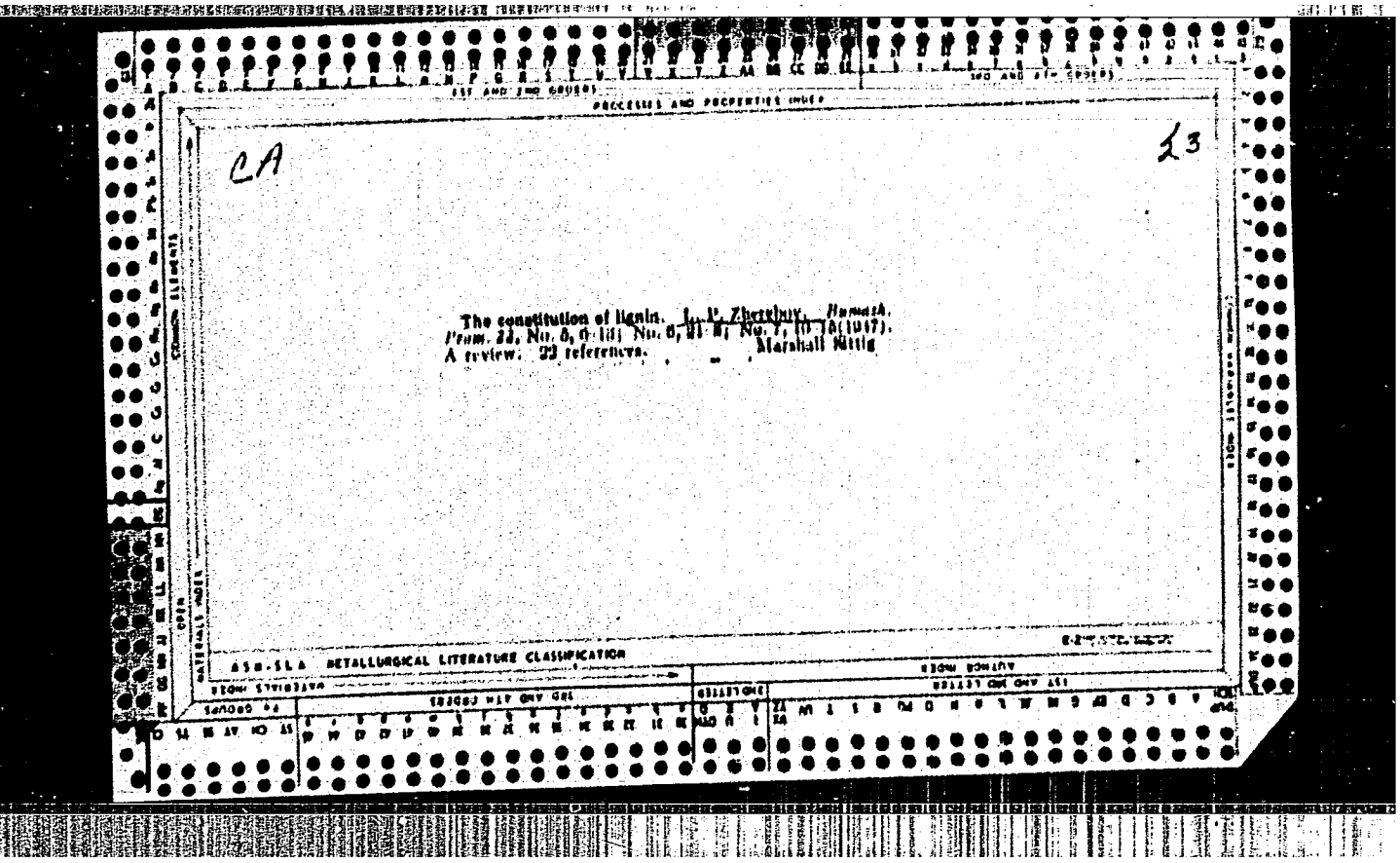
Mechanical functions of the chemical ingredients of wood. L. P. Zherebov. *Gidrolizn. Prom.* 21, No. 3/4, 14-20(1940).—The object of this investigation was a horizontal branch 6 m. long of a pine tree. The pine stood formerly in the midst of a dense forest and for the last 30 years at the edge of a clearing. This branch was analyzed in sections taken along its horizontal axis as well as ventrally and dorsally. The resin content decreased along the 1st m. and gradually rose to the tip of the branch. The resin content in the ventral and dorsal parts was practically the same except for the last section. The ash content increased up to where live twigs began and thence gradually dropped. Along the first 2 m. the ash content in the ventral and dorsal parts was the same. Along the next 2 m. it was somewhat lower in the dorsal part and then it somewhat increased in the dorsal part. The lignin content dropped from the base of the branch to its tip. Taking its content in its ventral part as 100 it was in the dorsal part 124 at the base and 113 at the end of the 5th m. Generally there was 1.5-2 times more lignin deposited in the dorsal than in the ventral part. The distribution of cellulose was a mirror image of the distribution of lignin. Taking the cellulose content in the dorsal part as 100 it was 113-14 at the base and tip of the ventral part and 113-15 in its middle. The pentosan content varied little along the axis and on either side of it, 16.41 and 15.8% in the ventral and dorsal parts, resp. In addn. were also detd. mannan, levulan, galactan, and glucan. The distribution of lignin, cellulose, hemicellulose, etc., in this branch was detd. by the mech. functions which they performed. The functions of the various components are discussed.

M. Hosek



CA

Investigation of chemical principles of continuous rapid sulfite cooking of spruce. L. P. Zherebov. *Bumazh. Prom.* 21, No. 7/8, 5-11(1946).—A critical review of the work of Jayme and Gröggard (*C.A.* 34, 7029) and others on this subject. M. Hoch



ZHEREBOV, L.P., professor.

Chemical decomposition of spruce wood in the sulfite cooking process. Bum. prom. 22 no.9:6-14 S '53. (MLRA 6:8)
(Wood pulp)

ZHEREBOV, L.P., professor.

Chemical decomposition of spruce wood in the sulfite cooking process. Bum. prom. 28 no.11:5-9 N '53. (MLRA 6:11)
(Wood pulp)

KORCHEMKIN, F.I.; ZHERBOV, L.P.; EVSTIGNEYEV, V.B.

The nature of some substances of the cambial juice of Pinus silvestris.
Doklady Akad. Nauk S.S.S.R. 90, 429-31 '53. (MLRA 6:5)
(CA 47 no.17:8839 '53)
1. A.N. Bakh Biochem. Inst., Moscow.